



Environmental Survey of Iraq for the year 2005



(Water , Sewage and Municipality services)



1-Foreword

1-1 Introduction

Environment protection is one of the main tasks that generally faces governments.

In our country, in Iraq, this task has exceptional importance, due to successive devastating wars for over two decades, which resulted in severe environmental deterioration and major pollution to environment elements, i.e. water, air, and land.

As an active participation on the part of Central Organization for Statistics and Information Technology to take care of Iraqi environment and pin down its problems, the environmental survey of Iraq for the year 2005 was conducted. The survey covered, water, sewage, and municipal services. Hoping that data included in this report will meet the anticipated goals.

1-2 Survey goals

- 1. Providing of data relevant to water supply services at each administrative unit level in urban and rural areas.**
- 2. Providing of data relevant to sewage services offered, and percentage of population served at each administrative unit.**
- 3. Providing of numeral indicators about garbage collection service and its quantities, kinds, method of treatment, number of sanitary land fill sites , and how far they coincide with environmental standards.**

Through out the process of reviewing such data, environmental policy makers in the governmental institutions concerned, can set sound strategies to protect both environment and community against all risks. Capabilities in collection and analysis of environmental data could be developed as well.

1-3 Expected results and benefits

- 1. Recognition of environmental problems extension, in order to treat them in all possible means.**
- 2. Sound future planning to treat pollution after realizing the quantity and quality of discharged pollutants and how far they can endanger environment.**

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2 Survey methodology and implementation.

2-1 Representation level

The survey covered Nineveh, Sulaimaniya, Karkuk, Diala, Anbar, Baghdad, Babylon, Kerbela, Wasit, Salah-Al-Deen, Najaf, Qadisiya, Muthanna, Thi-Qar, Maysan, and Basrah.

Data concerning drinking water and sanitation were collected and presented at Governorate level, while for municipal services, data were collected at municipality level, but results were presented at Governorate level.

The following table illustrates the number of municipalities in each Governorate in Iraq, which was covered by the survey. While filling questionnaire forms by some Governorate municipalities was not possible, due to deteriorated security conditions.

No	Governorate	No.of municipalities	No	Governorate	No.of municipalities
1	Nineveh	25	9	Wasit	17
2	Sulaimaniya	55	10	Salah-Al-Deen	17
3	Karkuk	12	11	Najaf	9
4	Diala	21	12	Qadisiya	15
5	Anbar	7	13	Muthanna	11
6	Baghdad	24	14	Thi-Qar	19
7	Babylon	15	15	Maysan	15
8	Kerbela	7	16	Basrah	15
Total					284

Data from 15 municipalities could not be obtained (One in Nineveh, twelve in Anbar, one in Babylon, and one in Salah-Al-Deen).

Data in Alshabka municipality in Najaf was added to Najaf municipality data because services were offered by the same municipality.

2-2 Questionnaire form

Because of such kind of survey has been newly introduced in the Central Organization for Statistics and Information Technology, the questionnaire forms were given special attention; several workshops were held for the evaluation of these forms by survey work team. Appropriate amendments were made. Three kinds of questionnaire forms for the environmental survey were prepared:

1. Water sector

Water sector form included indicators about number of population covered by drinking water network, quantity of water supplied, theoretical demand for potable drinking water, in addition to number of water treatment plants and water compact units with their designed capacity and quantity of water produced.

Water sector form also contained kind of tests carried out on drinking water in water treatment plants, water compact units and in the networks.

The form also contained kind of tests carried out on raw water, the form listed the main problems that water sector suffers from in the Governorate.

2. Sewerage sector

Sewerage sector form included indicators about number of population served by sewerage networks; number of population using septic tanks in the Governorates, quantity of discharged water from areas served by sewerage networks, number of central treatment stations, number of small treatment units and their actual and designed capacities.

The sewerage sector form also covered, kinds, number, and conditions of pumping station that exist in all Iraq Governorates.

The form also covered kind of polluting activities that drained to sewerage networks, treated and untreated discharged water. The form also listed the main problems facing the sewerage networks.

3. Municipality services sector

Municipality services sector form included indicators about number of population that are included by garbage collection services within municipality boundaries, quantity of garbage that are collected per day, data about containers, number of existed equipments in each municipality.

Municipality services sector form covered number of landfill sites, their areas, and the main problems facing municipality services sector.

2-3 Time Table

To insure that the stages of the survey have a clear methodology and to provide full control upon its different activities, a detailed timetable was prepared for the different stages of the survey. Generally, time of implementation of different stages was carried out as listed in the table here after.

We can say that the stage of preparation that precedes the fieldwork took two months long. The survey was implemented during the period (23/11-2/ 12) in 16 Iraqi Governorates.

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Timetable for environmental survey in Iraq for the year 2005

No.	Activity	Time
1	Preparation stage	
	Committee formation	17-19/10/2005
	Preparation of output tables	2-26/10/2005
	Design of questionnaire form and preparation of statistics framework.	2-10/10/2005
	Discussion of questionnaire form with experts	5-12/10/2005
	Pre- test and pilot survey	17/10/2005
	Approving final questionnaire form	18-22/10/2005
	Preparation of instructions for filling the questionnaire form, checking, and coding.	23-26/10/2005
	Preparation of computer programs to input data, outcome tables, and reports.	23/10/-20/11/2005
	Deciding and preparing work requirements for training courses and for field work (printing +office requirements+ transportation)and delivery to Governorates..	27/10/-2/11/2005
	Training courses	
	First training course: for central and local supervisor and field researcher.	20-21/11/2005
	Second training course: A course for checking and coding staff.	27/11/2005
	Third training course: A course for data input staff.	28/11/2005
	2	Field work stage
Innovating activities frame work		23/11/-2/12/2005
Field work		
3	Office work stage	
	Checking and coding	29/11-5/12/2005
4	Data input and computer processing	
	Questionnaire forms input in the computer	4-8/12/2005
	Checking final results	11-12/12/2005
5	Preparation of final reports and issuance	
	Preparation of preliminary report	13-26/12/2005
	Evaluation of preliminary report	27/12/2005-5/1/2006
	Preparation of final report	8-17/1/2006
	Issuance of final report	22/1/-9/2/2006

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2-4 Training

Training of technical staff received considerable attention in its different levels.

The training process was not confined to technical staff only, but it also covered committee members, central supervisors, office checking staff, and data processors.

The following points can summarize the training activity relevant to environment survey for the year 2005 :

1. Several workshops were executed by the higher committee in charge of the survey in the Central Organization for Statistics and Information Technology to evaluate the questionnaire form and to set instructions relevant to each kind of form and preparing validation rules
2. Three Training courses were held. Two days for the first training course, which was held in Baghdad, for central and local supervisors, field researchers, and data processors. The other two training courses were for auditors and coding staff, one day for each training course.
3. Number of trainees amounted to (93) trainees distributed as follows:

Committee members	8
Central supervisors	10
Local supervisors	16
Field researchers	49
Office checking staff	6
Programs analyzers	2
Data input staff	2
Total	93

2-4 Field work

A detailed work plan was set to accomplish fieldwork, which can be summarized by:

1. Central supervisors were distributed to the Governorates at the rate of one central supervisor for two Governorates, except for Baghdad they were two, and one central supervisor for Sulaimaniya
2. Number of local supervisors was amounted to 16 represented by Directorate of Statistics manager in each surveyed Governorate.
3. Number of field researchers was amounted to (49) researchers from Baghdad and Governorates. They were distributed in the Governorates as shown in the following table :

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No.	Governorate	No.of researchers	No.	Governorate	No.of researchers
1	Nineveh	4	9	Wasit	2
2	Sulaimaniya	8	10	Salah-Al-Deen	3
3	Karkuk	3	11	Najaf	2
4	Diala	3	12	Qadesya	2
5	Anbar	3	13	Muthanna	2
6	Baghdad	5	14	Thi-Qar	3
7	Babylon	2	15	Missan	2
8	Kerbela	2	16	Basrah	3
Total					49

Fieldwork went on for 10 days. To insure efficient and active implementation, transportation was allotted for each central supervisor and local supervisor, and for each field researcher. The transporting vehicles were used during all fieldwork days.

2-5 Office work

After the fieldwork had been completed, the used questionnaire form was subjected to a series of official operations, as mentioned here under:

1. Checking the completed questionnaire forms by the central supervisors.
2. Checking the completed questionnaire forms by Ministry of Environment experts.
3. Checking and coding the completed questionnaire forms in the Central Organization of statistics and information Technology by environmental statistics department staff.
4. Inserting data to the computer, checking the input process by input reviewers, necessary correction and data input screening were carried out.
5. Data were processed manually to insure accurate data entry to the computer.
6. After the completion of final tables, results were checked, discussed, and reviewed wherever necessary with municipalities in the Governorates, Ministry of Municipalities and Public Works, Amanat Baghdad, and Water and Sewerage departments. Data collected from the Governorates were compared with Data base available at the industrial Statistics department received from Water and Sewerage departments.

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The reason for this comparison, is that this survey is held for the first time in Iraq, and there is no previous local or regional such survey to compare data with.

3- Results analysis

The survey covered the entire Iraqi Governorate i.e. (16) Governorates, except for Erbeel and Dhok. Amanat Baghdad and Baghdad outskirts were considered as two different sources for collecting statistical data.

Data presented in the report was checked and revised by Ministry of Municipality and Public Works and Amant Baghdad.

Data of water sector was checked and compared with the available previous results.

Here under the main indicators at national level ¹ :-

3-1 Water sector

- The percentage of population covered by drinking water networks forms (73.7%) i.e number of population covered approaches (19202108) out of total population of (26039272) ² in (16) Governorates except for Erbeel and Dhok. The percentage of population covered in urban areas amounted to (79.9%) while the percentage of population covered in rural areas amounted to (61.1%), as shown in table (1).
- Table (2) explains that (97.3%) of water resources used in water plants were rivers and streams, while (2.1%) were well water, and that (95.1%) of water resources as rivers and streams were used in water compact units where as (2.5%) of water resources were well water .
- Table (3) explains that number of water plants and number of compact units was (240), (1425) respectively, and the total number of both was (1665) in Governorates covered by the survey.
The total design capacity of plants was (346913) m³ /hr, and the amount of water produced from water plants was (277226) m³ /hr while the amount of water produced from water compact units only was (77943) m³/hr.

The percentage of water produced to design capacity in water plants was (79.9%).

¹ The final summation of some percentages may not equal 100%, for some questions have more than one answer.

² According to 2005 population approximations / The Central Organization for Statistics and information Technology

- Table (4) explains that number of population covered and their percentages according to rural and urban living areas. Covered population in urban areas within Amanat Baghdad had the highest percentage (100%), while covered population in urban areas in Maysan governorate had the lowest percentage (35.5%). Moreover, for rural areas, Karkuk governorate had the highest percentage (95.1%), where as Sulaimaniya governorate had the lowest percentage (10%).
- Table (5) explains amount of water supplied to urban and rural areas. The amount of supplied water to urban areas was (244150) m³ /hr, while the amount of water supplied to rural areas was (100490) m³ /hr .Where as the estimated amount of water that the Governorates need was (535094) m³ /hr.
- Table (6) explains that per capita share of drinking water was (0.018) m³ /hr and that the highest per capita share was in Baghdad outskirts (0.03) m³ /hr, while the lowest average share was in Muthanna Governorate (0.011) m³ /hr.
- Table (7) explains that number of working plants and partially working plants. Number of working plants was (35) i.e. a percentage of (14.58%), while partially working was (204) i.e. a percentage of (85%) out of total number of partially working plants, and one plant is out of use.
- Table (11) shows that the availability of drinking water is provided in moderate amounts at a percentage of (81.25%), which represents most of the Governorates and provided in low amounts at percentage of (12.5%), and in sufficient amounts in the rest of Governorates, that is a (6.25%).
- Table (12) shows that desalted water was produced in (Kerbela, Wasit, Qadisiya, Muthanna, Thi-Qar, and Basrah) governorates. The highest production was in Basrah governorate (600) m³ /hr, while Wasit Governorate had the least amount of production (2)m³ /hr.
- Table (13) shows that all the Governorates covered by the survey were suffering from water sector problems such as (old and inefficient networks, insufficient supply, shortage and instability of electric power, network breaches by the users, lack of awareness for rationing consumption). Where as problem of lack or poor maintenance was less to suffer from, in water sector and at (6.3%) of the governorates

3-2 Sewerage Sector

- Table (14) shows that the percentage of population served by sewerage networks was (25.7%) out of total population of the surveyed Governorates. While percentage of population using septic tanks was (51.2%) out of total population of the surveyed Governorates. The percentage of both population served by sewerage networks and population using septic tanks to the total population of the surveyed Governorates was (23.1%).
- Table (15) shows that there are (38) main sewerage treatment stations and small sewerage treatment units in the (16) Governorates covered by the survey. There are (14) main sewerage treatment stations and (24) small sewerage treatment units. The table also shows that the percentage of working main sewerage treatment stations and small sewerage treatment units was (31.6%), while (31.6%) partially working, and (36.8%) out of use entirely.
- Table (16) shows that total design capacities for main sewerage treatment stations and small sewerage treatment units were (1038019) m³ /day. The design capacities for main sewerage treatment stations was (97.1%), while the percentage of design capacities for small sewerage treatment units was (2.9%). The total actual design for both was (317449) m³ /day, (99.5%) for main sewerage treatment station, and (0.5%) for small sewerage treatment units.
- Table (17) explains that number of population covered by sewerage networks was (6681304) i.e. a percentage of (25.7%) out of total population of the surveyed Governorates. The highest percentage of population served by sewerage networks in Sulaimaniya Governorate, next in Amant Baghdad with percentages of (80%) and (75%) respectively. Table (17) explains also the amount of water discharged from areas covered by sewerage networks which was (1525500) m³ /day. The highest amount of that water was in Amant Baghdad areas (1100000) m³ /day, and the lowest amount was in Muthanna governorate, about (1000) m³ /day. Notice that there isn't any data in Diala and wasit governorate, for these Governorates are not covered by sewerage networks.
- Table (18) shows that (75%) of the governorates have sewerage networks, and (87.5%) have rain water networks, while (37.5%) have combined networks. Table (18) also shows that (75%) of the networks were in moderate condition, (25%) in bad conditions. The same table shows that (75%) of Governorates suffer from excess sewage in some areas, while (12.5%) of Governorates suffer from excess sewage in most areas. Excess sewage does not exist in the (12.5%) of Governorates covered by the survey.

- Total number of sewage pumping stations was (769) stations, (404) stations for storm water, (289) stations for sewage, and (76) as combined pumping stations. Most of them were within Amant Baghdad area (278) station, and the least were in Karkuk Governorate (2) pumping stations, while there is no pumping stations at all in Sulaimaniya Governorate, as shown in table (19).
- Table (20) shows that (73.3%) of pumping stations were in moderate condition, and (6.7%) were in good condition, while (20%) of them were totally in bad condition.
- Table (21) explains that number of main sewage treatment stations in Iraq was (14) treatment stations. Their total design capacities were (1008000) m³/day while their total actual capacities were (316000) m³ /day, i.e. the percentage of actual capacity to design capacity for the stations mentioned above is (31.3%), which means that these stations were either not operating with full capacity, or were not duly efficient. They mostly exist within Amant Baghdad area that is (3) main sewage treatment stations, with total design capacities of (680000) m³ /day, and their total actual capacity was amounted to (112000) m³ /day, i.e. they were only operating at (16.5%) of the design capacity.
- The number of small sewage treatment units was (24) units with total design capacity of (30019) m³ /day and total actual capacities of (1449) m³ /day. The highest design capacity was in Nineveh Governorate (18000) m³ /day, and the lowest design capacity was in Diala Governorate (70) m³ /day, while the highest design capacity was in Karkuk Governorate (1199) m³ /day and the lowest actual capacity was in Babylon Governorate (100) m³ /day. The actual capacity of the small sewage treatment units is greater than the design capacity in Qadisiya Governorate, because their limited number makes them overloaded all the time taking into consideration absence of design and actual capacity data in some Governorates as shown in table (22).
- Table (23) shows that the total number of polluting activities³; treated and untreated activities drained to the sewage networks were (1271) activities. The total number of activities with treatment units was (111) activities, i.e. with a percentage of (8.7%). While the total number of activities with out treatment units was (1160) activities i.e. with a percentage of (91.3%). Industrial establishments occupied the highest number of polluting activities discharging to sewerage networks (596) activities while slaughterhouses represented the lowest number of polluting activities drained to sewerage networks (11)

³ Polluting activities: This term includes all activities whether they were sanitary, agricultural, industrial, commercial.....etc., affecting and polluting environmental elements, i.e. water, air, and land.

activities, distributed all over Governorates because most of slaughter operations are carried out outside slaughterhouses.

- Table (24) shows that the percentages of sewage networks main problems. The main problems sewerage sector suffers from are shortage of facilities, lack of public awareness and sewerage networks abuse having a percentage of (100%) for Governorates covered by the survey. While percentage of poor and lack of maintenance, old, inefficient sewage treatment stations, and other like problems was (46.2%).
- Table (25) shows that the number of population using septic tanks was (13332107) i.e. a percentage of (51.2%) out of total population of the covered Governorates. The highest percentage of population using septic tanks was in areas out of Baghdad outskirts and was (99.2%) of the total population of this area taking into consideration absence of Septic tanks system in Sulaimaniya Governorate.
- Table (26) shows that (13) Governorates drain sewage of houses unserved by sewage networks to nearby lands i.e. a percentage of (86.7%), next a percentage of (73.3%) of Governorates discharge to drainages and a percentage of (53.3%) of Governorates discharge sewage to rivers.

3-3 Municipality services

- Table (27) shows that total number of municipalities covered by the survey was (284) municipalities, and that a percentage of (43%) of total followed by suffer from debris, waste of war in residential areas, a percentage of (28.2%) in industrial areas, then a percentage of (27.1%) in commercial areas afterwards, a percentage of (26.1%) in public streets and at last a percentage of (19%) in public parks
- Table (28) shows the number of population served by garbage collection services and their percentages. Percentage of population served to total number of population in surveyed Governorates was (55.6%). Percentage of population served in urban areas (79.8%), knowing that residents in rural areas are not covered by garbage collection services. The same table also shows that the quantity of garbage lifted up by the municipality departments was (14920.6) Ton/ day.
- Table (29) and (30) show that total number of containers distributed to the surveyed Governorates was (3565) containers excluding distributed barrels and concrete containers.

- Residential areas had the highest number of containers. They were (1807) containers, i.e. a percentage of (50.7%). Percentage of containers distributed in to governmental institutions was (18.1%), containers distributed in to commercial areas (15.2%) in to public streets (11%), in to public parks (2.7%), while number of containers distributed in to industrial areas was the least amounted to (84) containers, i.e. a percentage of (2.3%).
- Table (31) shows that the percentage of residents using garbage containers was (15.8%) of total municipalities covered by the survey, where as the percentage of residents using garbage containers, sometimes, was (38.4%), and the percentage of residents not using containers was (45.8%). The highest percentage of residents using containers was in Nineveh Governorate, amount to (48%) of Nineveh municipalities, and then Najaf Governorate which had a percentage of (44.4%).

The table also shows that the rate of unloading small containers was the highest among the different sizes of containers, (small container 1 m³, medium container 6 m³, large container 8 m³).

The rate of unloading of small containers was (0.5) times a week, (2.9) times a week for medium containers, and (2.3) times a week for large container. The highest average number of unloading of small containers was in Babylon governorate, which was (7.4) times a week, while the highest rate of unloading of medial containers was in Al-Muthanna Governorate, which was (14.0) times a week, and The highest rate of unloading large containers was in Sulaimaniya Governorate, which was (3.8) times a week. There was no separation or garbage sorting at household level, in all covered Governorates except for Sulaimaniya Governorate, which was (60.0%) out of its municipalities.

- Tables (32) and (33) show that the total number of pressing trucks was (1558), and only (1232) pressing trucks were working i.e. a percentage of (79.1%), where as (326) pressing trucks are out of use, i.e. a percentage of (29.9%). Amanat Baghdad had the highest number of pressing trucks, (379) pressing trucks working which represent a percentage of (82.6%) and (80) pressing truck out of use which represent a percentage of (17.4%).

The number of hired vehicles and facilities that used to cover municipalities services was (1820) vehicles and facilities. Amanat Baghdad had the highest number, that is (970) vehicles and facilities a percentage of (53.3%). Thi-Qar Governorate had the lowest number, that is (2) vehicles and facilities.

Rate of garbage collection per week was (4.2) in the surveyed governorates. Amant Baghdad had the highest rate of garbage collection (6) times per week and Al-Anbar had the lowest average of garbage collection (1.1) times per week.

- Table (33) also shows that the percentage of number of municipalities having facility for house's garbage collection was (96.8%) at Governorates municipality level, while a percentage of (3.2%) of municipalities didn't have any facilities for house's garbage collection.

The same table also shows that these owned or hired vehicles and facilities were insufficient to cover the municipalities services, a (89.2%) of municipalities declared that, owned or hired vehicles and facilities were insufficient to cover the municipalities services where as, only a percentage of (10.8%) of municipalities declared that they had enough vehicles and facilities to meet their needs.

- Tables (36) and (37) show that the highest percentage of town cleaning was for main streets (96.1%) that is in (273) municipalities, followed by markets at a percentage of (94.4%) that is in (268) municipalities, public parks having a percentage of (81.3%) that is in (231) municipalities, while the highest rate of cleaning times per week was for cleaning markets (5.3) times, followed by cleaning streets at a rate of (5) times, cleaning public grounds at a rate of (3.1) times per week.

- Table (38) explains method of garbage treatment and disposing. Disposing of garbage by throwing them in empty lots had the highest percentage of method of disposing (39.4%), followed by disposing to sanitary landfill sites at a percentage of (39.1%). Where as neither recycling nor selling, garbage to non licensed contractors took place.

- Table (39) shows that number of sanitary land fill sites is (237) sites. (167) sites, having a percentage of (70.5%) were within the environmental standards, while (70) sites were out of the environmental standards i.e. a percentage of (29.5%). The same table also shows that the number of transferring station (Temporary accumulation stations) is (69) stations, and their total areas equal to (519) Donum. Most of them located within Amant Baghdad area having the number of (12) transferring stations.

- Table (40) shows the percentage of garbage landfill sites according to municipality basic design. A percentage of (98.4%) of sites were out of the basic design of municipalities according to the accredited standards. It was noticed that there is one filling site within the basic design of Baghdad city, which represent a percentage of (33.3%).

The table also shows ground water levels in landfills sites. (38.9) m was the highest ground water average depth, which was in Sulaimaniya landfill, next was (22.3) m ground water average depth in Diala landfill, while Al-Muthanna and Maysan landfills had the lowest ground water average depth (1.0) m.

- **Table (41) shows the main requirements that landfill sites should have such as fence, paved and suitable roads to ensure easy transport of garbage and solid waste, administration, and monitoring offices, toilets, scale, tools, and facilities used for dumping. Percentages showed shortage in meeting the requirements mentioned above. No fences available in most landfill sites, only a percentage of (28.1%) out of total sites, and there is no scale except in (1.6%) out of total landfill sites, while equipments and tools could be found only in (10.9%) of total land fill sites.**
- **Table (42) explains that the main problems that municipalities suffer from, as they affect and minimize services. shortage of vehicles was the main problem (83.8%), followed by shortage of working staff (82.4%), insufficient wages (79.2%), where as other problems formed the lowest percentage of (14.8%).**
- **Table (43) shows number of workers in municipality sectors, the total number of working staff was (37045) in all surveyed Governorates. Number of permanent engineers was (1717), temporary engineers (109), permanent monitors (1844), temporary monitors (342). Permanent technicians (4067) and (240) temporary technicians. Number of permanent administrators was (8400) while temporary administrator was (455). The highest number of workers was for unskillful workers which was (11500) permanent workers and (8371) temporary unskillful workers, while total number of permanent workers was (27528) and total number of temporary workers was (9517).**
- **Table (44) explains that total number of available facilities and equipments was (7671). Number of containers (3565), number of container crane (1558), number of trailers (690), number of pressing vehicle (1558), number of rollers (251), number of shovels (362) number of bulldozers (114), number of tipped track (603), number of dumper (113), where as number of sewage jet trucks (84), and number of vaccumers (145).**

Detailed Tables

Table (1)

Total population and No. and percentages of population covered by drinking water networks, according to urban and rural areas at national level for the year 2005.

Area	*Total population	No. of population covered by drinking water networks	Percentage of covered population
Urban	17259925	13795892	79.9
Rural	8779347	5406216	61.6
Total	26039272	19202108	73.7

*** Population estimates prepared by the(Central Organization for Statistics and Information Technology) for the year 2005- except for Erbeel and Dhok governorates**

Table (2)

Percentage of water resources used in drinking water plants and water compact units at national level for the year 2005.

Water resources	Water resource used in water plants		Water resource used in water compact units	
	No. of Govrnorates	Percentage%	No. of Govrnorates	Percentage%
Rivers and streams	16	97.3	15	95.1
Wells	5	2.1	4	2.5
Others	3	0.6	2	2.4
Total		100.0		100.0

Table (3)

Number of drinking water plants and water compact units; total design capacities, and amount of produced water at national level for the year 2005*.

Classifications	Number	Percentage%	Designed capacity (m3/hr)	Quantity of produced water(m3/hr)	Percentage of produced water to design capacity
Plants**	240	14.4	346913	277226	79.9
Compact units***	1425	85.6		77943	
Total	1665	100.0		355169	

Note* Data concerning the survey of water sector was amended according to data available in Ministry of Municipality and PublicWorks \ General Directorate for Water .

****** Water plants : is a series of connected units , which start with water withdrawal from different sources (River, lake, well and accumulation tank) passing through filtration and disinfection processes and pumping major cities directly or by enforcing stations.

******* Compact units: are small purification units, having the same sequences of water plant, their infrastructure is made of galvanized iron to insure easy and fast construction, but still less efficient than water plants, and are used in villages and rural areas.

Table (4)

Total population and no. and percentages of population covered by drinking water networks according to urban and rural areas and Governorate for the year 2005.

Governorate	Total population	No. of population.		No. of covered population*			Percentage of covered population %		
		Urban	Rural	Urban	Rural	Urban & Rural	Urban	Rural	Urban & Rural
Nineveh	2637327	1607788	1029539	1347157	898104	2245261	83.8	87.2	85.1
Sulaimaniya	1773100	1248380	524720	898834	52472	951306	72.0	10.0	53.7
Karkuk	870098	603971	266127	563105	252989	816094	93.2	95.1	93.8
Diala	1464437	608338	856099	556206	768095	1324301	91.4	89.7	90.4
Anbar	1379322	715493	663829	471398	435136	906534	65.9	65.5	65.7
Amant Baghdad	5345099	5345099	0	5345099	0	5345099	100.0	0.0	100.0
Baghdad outskirts	1438888	561511	877377	258295	245666	503961	46.0	28.0	35.0
Babylon	1544679	728068	816611	363435	409831	773266	49.9	50.2	50.1
Kerbela	819376	532756	286620	466245	251055	717300	87.5	87.6	87.5
Wasit	1001615	524453	477162	351586	324540	676126	67.0	68.0	67.5
Salah Al-Deen	1104935	509739	595196	471625	385875	857500	92.5	64.8	77.6
Najaf	1011597	696504	315093	514860	231314	746174	73.9	73.4	73.8
Qadisiya	937261	488615	448646	322823	297911	620734	66.1	66.4	66.2
Muthanna	574351	253596	320755	110660	140840	251500	43.6	43.9	43.8
Thi - Qar	1518962	884079	634883	402670	284646	687316	45.5	44.8	45.2
Maysan	782826	509551	273275	181114	97522	278636	35.5	35.7	35.6
Basrah	1835399	1441984	393415	1170780	330220	1501000	81.2	83.9	81.8
Total	26039272	17259925	8779347	13795892	5406216	19202108	79.9	61.6	73.7

* No. of population covered by drinking water networks was adjusted according to data received from Ministry of Municipality and Public Works \ General Directorate for Water .

Table (5)

Number of drinking water plants and water compact units; quantities of produced and supplied water, according to urban and rural areas; and estimated amounts needed by Governorates for the year 2005.

Governorate	No. of plants	No. of water compact units	Quantity of produced drinking water (m ³ /hour)		Quantity of supplied water (m ³ /hr)		Approximate quantities needed by governorates (m ³ /hr)
			Plants	Units	Urban	Rural	
Nineveh	36	71	36727	4505	24902	15921	44165
Sulaimaniya	2	0	17000	0	15000	2000	25000
Karkuk	12	37	17747	1800	13375	6009	18750
Diala	25	115	15111	9863	10113	13966	27354
Anbar	20	142	13970	2763	8571	7912	20000
Amant Baghdad	8	30	83000	6000	85000	0	104000
Baghdad outskirts	10	134	10203	4750	8858	5664	33709
Babylon	18	106	10930	3441	6608	7452	42478
Kerbela	7	56	11814	1350	8477	4565	16000
Wasit	21	107	8111	4600	6392	5901	22000
Salah Al-Deen	17	110	12772	3100	8575	7016	19048
Najaf	9	53	12339	1350	9361	4206	18000
Qadisiya	12	82	8404	2350	5481	5060	12601
Muthanna	4	26	2271	606	1242	1581	8650
Thi - Qar	14	63	4554	8875	7321	5302	30000
Maysan	13	136	3118	2640	3587	1931	20000
Basrah	12	157	9155	19950	21287	6004	73339
Total	240	1425	277226	77943	244150	100490	535094

Table (6)

Number of population covered and average per capita amount of drinking water in cubic meters/hr and total design and produce capacities according to Governorate for the year 2005.

Governorate	No. of population covered by drinking water services	Average capita share of drinking water (m³/hr.)	Total plants design capacities (m³/hr.)	Total quantity of produced water from water plants and water compact units (m³/hr.)
Nineveh	2245261	0.018	41561	41232
Sulaimaniya	951306	0.018	22000	17000
Karkuk	816094	0.024	23171	19547
Diala	1324301	0.019	16523	24974
Anbar	906534	0.018	19791	16733
Amant Baghdad	5345099	0.017	106000	89000
Baghdad outskirts	503961	0.030	12902	14953
Babylon	773266	0.019	13664	14371
Kerbela	717300	0.018	15753	13164
Wasit	676126	0.019	9832	12711
Salah Al-Deen	857500	0.019	16876	15872
Najaf	746174	0.018	14077	13689
Qadisiya	620734	0.017	9841	10754
Muthanna	251500	0.011	4352	2877
Thi - Qar	687316	0.020	5589	13429
Maysan	278636	0.021	3209	5758
Basrah	1501000	0.019	11773	29105
Total	19202108	0.018	346913	355169

Table (7)**Number of drinking water plants according to their conditions and Governorates for the year 2005.**

Governorates	No. of plants			
	Working	Partially working	Out of use	Total
Nineveh	1	35	0	36
Sulaimaniya	1	1	0	2
Karkuk	0	12	0	12
Diala	0	25	0	25
Anbar	0	20	0	20
Amant Baghdad	8	0	0	8
Baghdad outskirts	6	4	0	10
Babylon	0	18	0	18
Kerbela	0	7	0	7
Wasit	17	3	1	21
Salah Al-Deen	2	15	0	17
Najaf	0	9	0	9
Qadisiya	0	12	0	12
Muthanna	0	4	0	4
Thi - Qar	0	14	0	14
Maysan	0	13	0	13
Basrah	0	12	0	12
Total	35	204	1	240

Table (8)

Percentages of water resources used in drinking water plants and water compact units according to Governorates for the year 2005.

Governorate	Water resources used in water plants%			Water resources used in water compact units%		
	Rivers and streams	Wells	Others	Rivers and streams	Wells	Others
Nineveh	87.0	12.0	1.0	98.0	1.0	1.0
Sulaimaniya	95.0	0.0	5.0	0.0	0.0	0.0
Karkuk	100.0	0.0	0.0	77.0	23.0	0.0
Diala	97.0	3.0	0.0	75.0	25.0	0.0
Anbar	100.0	0.0	0.0	100.0	0.0	0.0
Amant Baghdad	100.0	0.0	0.0	100.0	0.0	0.0
Baghdad outskirts	100.0	0.0	0.0	100.0	0.0	0.0
Babylon	100.0	0.0	0.0	100.0	0.0	0.0
Kerbela	100.0	0.0	0.0	100.0	0.0	0.0
Wasit	100.0	0.0	0.0	100.0	0.0	0.0
Salah Al-Deen	80.0	10.0	10.0	50.0	10.0	40.0
Najaf	98.0	2.0	0.0	100.0	0.0	0.0
Qadisiya	100.0	0.0	0.0	100.0	0.0	0.0
Muthanna	99.0	1.0	0.0	100.0	0.0	0.0
Thi - Qar	100.0	0.0	0.0	100.0	0.0	0.0
Maysan	100.0	0.0	0.0	100.0	0.0	0.0
Basrah	100.0	0.0	0.0	100.0	0.0	0.0
Total	97.3	2.1	0.6	95.2	2.5	2.4

note . Differences in percentages due to approximations.

Table (9)

Number of tests carried out on raw and supplied water according to the type of test and Governorate for the year 2005.

Governorates	No. of tests carried out on drinking water plants and compact units			No. of tests carried out on drinking water in distribution networks			No. of tests carried out on raw water in plants and water compact units	
	Bacteriology test	Chemical test	Chlorine test	Bacteriology test	Chemical test	Chlorine test	Bacteriology test	Chemical test
Nineveh	1	12	1	1	0	1	0	12
Sulaimaniya	2	12	1	2	12	1	2	12
Karkuk	3	9	1	3	9	1	0	3
Diala	3	11	1	3	0	1	0	11
Anbar	2	2	1	2	2	1	0	0
Amant Baghdad	3	24	1	3	1	1	3	24
Baghdad outskirts	3	14	1	3	2	1	0	14
Babylon	3	10	1	3	2	1	0	10
Kerbela	3	9	1	3	0	1	0	10
Wasit	3	11	1	3	1	1	0	11
Salah Al-Deen	3	4	1	3	4	1	0	1
Najaf	3	7	1	0	0	1	0	7
Qadisiya	3	12	1	3	4	1	0	12
Muthanna	3	9	1	3	9	1	0	9
Thi - Qar	3	9	1	3	9	1	0	9
Maysan	2	7	1	2	7	1	0	7
Basrah	3	3	1	3	3	1	0	3

Table (10)

Number of samples taken of the produced water from water plants and compact units; and distribution networks during the last two weeks of the survey according to Governorate for the year 2005.

Governorate	No. of samples taken for tests from water plants and water compact units according to type of test			No. of samples taken from distribution networks according to type of test			No. of samples taken from raw water used in water plants and compact units according to type of test	
	Bacteryology test	Chemical test	Chlorine test	Bacteryology test	Chemical test	Chlorine test	Bacteryology test	Chemical test
Nineveh	52	52	156	70	0	101	0	43
Sulaimaniya	25	8	20	150	5	150	12	4
Karkuk	75	360	50	300	81	60	0	270
Diala	23	23	23	30	0	30	0	23
Anbar	15	15	30	5	5	8	0	0
Amant Baghdad	164	104	400	228	228	228	16	77
Baghdad outskirts	508	254	1778	2540	127	1778	0	127
Babylon	21	21	21	70	70	70	0	21
Kerbela	96	20	72	96	10	72	0	10
Wasit	32	32	50	88	70	88	0	32
Salah Al-Deen	492	492	3444	492	492	3444	0	1
Najaf	150	10	1000	0	10	1000	0	10
Qadisiya	53	28	25	56	16	120	0	28
Muthanna	50	18	15	50	18	15	0	18
Thi - Qar	25	3	132	25	3	400	0	3
Maysan	50	15	80	37	12	36	0	12
Basrah	100	75	250	200	100	250	0	200
Total	1931	1530	7546	4437	1247	7850	28	879

Table (11)

Percentage of water supplied to the users for the year 2005.

Amount of water case supplied to the users	No. of governorate	Percentage %
Good	1	6.25
Moderate	13	81.25
Little	2	12.50
Unavailable	0	0.00
Total	16	100.00

Table (12)

Quantity of desalted water produced and average per capita amount according to Governorate for the year 2005.

Governorate	Number of population	Quantity of desalted water produced (m3\hr)	Average capita amount of desalted water (m3\hr.)
Nineveh	2637327	0	0
Sulaimaniya	1773100	0	0
Karkuk	870098	0	0
Diala	1464437	0	0
Anbar	1379322	0	0
Amant Baghdad	5345099	0	0
Baghdad outskirts	1438888	0	0
Babylon	1544679	0	0
Kerbela	819376	25	0.00003
Wasit	1001615	2	0.000002
Salah Al-Deen	1104935	0	0
Najaf	1011597	0	0
Qadisiya	937261	25	0.00003
Muthanna	574351	110	0.0002
Thi - Qar	1518962	80	0.00005
Maysan	782826	0	0
Basrah	1835399	600	0.0003
Total	26039272	842	0.00003

Table (13)

Percentage of main problems affecting drinking water sector according to Governorate for the year 2005.

Main problems	No. of Governorates	Percentage %
Inefficient plant	9	56.3
Shortage of supplied water from resources	7	43.8
Pollution of water resource	5	31.3
Old and inefficient networks	16	100.0
Insufficient of the plant production	16	100.0
Poor maintenance	1	6.3
Shortage of spare parts and raw materials	12	75.0
Shortage of technical and administrative staff	12	75.0
Inefficient technical staff	4	25.0
Shortage and instability of electric power	16	100.0
Network breaches by the users	16	100.0
Users lack of awareness for rationing consumption	16	100.0
Other problems	7	43.8

Table (14)

Number of population covered and uncovered by sewerage networks at national level for the year 2005.

Details.		Data
Existence of sewage networks	No. of population covered by sewage networks	6681304
	Percentage of population covered by sewage networks to total population of the covered governorates	28.3
	Percentage of population covered by sewage networks to total population of the governorates covered by the survey.	25.7
Existence of septic tanks	No. of population using septic tanks	13332107
	Percentage of population covered by septic tanks to total population of the governorates covered by septic tanks	54.9
	Percentage of population covered by septic tanks to total population of the governorates covered by the survey.	51.2
Un existence of sewage networks or septic tanks system	No. of population uncovered by neither networks nor sewage septic tanks system	6025861
	Percentage of population uncovered by niether septic tanks nor sewage networks to total population of the uncovered governorates .	33.2
	Percentage of population uncovered by niether sewage networks nor septic tanks to total population of the governorates covered by the survey.	23.1
Total	NO. of governorates	16
	Total population	26039272

Table (15)

Condition of central sewage treatment stations and small sewage treatment units at national level for the year 2005. *

Condition of treatment station	Central treatment stations		Small sewage treatment units		Total	Percentage summation%
	No.	Percentage	No.	Percentage%		
Working	8	57.1	4	16.7	12	31.6
Partially working	3	21.4	9	37.5	12	31.6
out of use	3	21.4	11	45.8	14	36.8
Total	14	100.0	24	100.0	38	100.0

Table (16)

Total designed and actual capacities of central sewage treatment stations and small sewage treatment units and their percentages at national level for the year 2005.*

Kind of capacities	Central treatment stations		Small sewage treatment units		Total M3 /day	Percentages%
	M3 /day	Percentage%	M3 /day	Percentage %		
Designed capacity	1008000	97.1	30019	2.9	1038019	100.0
Actual capacity	316000	99.5	1449	0.5	317449	100.0

***Data was adjusted after consultation with General Sewage Department / Ministry of Municipality and Public Works**

Table (17)

Number and percentages of population covered by sewerage networks and the quantity of sewage disposed according to Governorate for the year 2005.

Governorate	Total population	No. of population covered by sewage networks *	Percentage of covered population	Quantity of sewage discharged from covered areas M3 /day
Nineveh	2637327	61500	2.3	15375
Sulaimaniya	1773100	1418480	80.0	112000
Karkuk	870098	9000	1.0	2250
Diala	1464437	0	0.0	0
Anbar	1379322	35500	2.6	8875
Amant Baghdad	5345099	4008824	75.0	1100000
Baghdad outskirts	1438888	12000	0.8	3000
Babylon	1544679	50000	3.2	12500
Kerbela	819376	150000	18.3	37500
Wasit	1001615	0	0.0	0
Salah Al-Deen	1104935	82000	7.4	20500
Najaf	1011597	180000	17.8	45000
Qadisiya	937261	50000	5.3	12500
Muthanna	574351	4000	0.7	1000
Thi - Qar	1518962	95000	6.3	23750
Maysan	782826	75000	9.6	18750
Basrah	1835399	450000	24.5	112500
Total	26039272	6681304	25.7	1525500

*** Data of population served by sewage networks was according to the data received from general sewage department**

Table (18)

Percentage of sewerage networks type; case of sewerage networks and percentage of suffering from sewage excess for the year 2005.*

Details		No. of governorates	Percentage %
Type of sewage networks	Sewage networks	12	75.0
	Rain water networks	14	87.5
	Combined networks	6	37.5
Case of sewage networks	Good	0	0.0
	Moderate	12	75.0
	Bad	4	25.0
	Total	16	100.0
Percentage of Governorates suffering from sewage water excess	In most areas	2	12.5
	In some areas	12	75.0
	No sewage water excess	2	12.5
	Total	16	100.0

***Data was amended after consultation with general sewage department / Ministry of Municipality and Public Works**

Table (19)**Number of sewage pumping stations according to type and Governorate for the year 2005.***

Governorates	No. of sewage pumping stations in governorates according to type			
	Rain water pumping stations	Sewage pumping station	Combined pumping station	Total
Nineveh	7	5	0	12
Sulaimaniya	0	0	0	0
Karkuk	0	2	0	2
Diala	10	0	0	10
Anbar	24	6	0	30
Amant Baghdad	83	168	27	278
Baghdad outskirts	14	5	0	19
Babylon	20	12	0	32
Kerbela	8	4	0	12
Wasit	63	0	0	63
Salah Al-Deen	8	12	1	21
Najaf	5	7	0	12
Qadisiya	4	17	2	23
Muthanna	28	5	0	33
Thi - Qar	24	1	14	39
Maysan	29	0	32	61
Basrah	77	45	0	122
Total	404	289	76	769

***Data was amended after consultation with general sewage department / Ministry of Municipality and Public Works**

Table (20)

Percentage of the practical case of sewage pumping stations for the year 2005*.

Case of sewage pumping stations	No. of Governorates	Percentages %
Good	1	6.7
Moderate	11	73.3
Bad	3	20.0
Total	15	100.0

***Data was amended after consultation with general sewage department / Ministry of Municipality and Public Works**

Table (21)

Number of central sewage treatment stations and the actual and design capacities according to practical case and Governorate for the year 2005*.

Governorates	No. of central sewage treatment station	No. of working stations	No. of partially working stations	No. of out of use stations	Total design capacities m3/day	Total of actual capacities m3/day	Percentage of actual capacity to design capacity
Nineveh	0	0	0	0	0	0	0.0
Sulaimaniya	0	0	0	0	0	0	0.0
Karkuk	1	0	0	1	0**	0	0.0
Diala	0	0	0	0	0	0	0.0
Anbar	0	0	0	0	0	0	0.0
Amant Baghdad	3	1	1	1	680000	112000	16.5
Baghdad outskirts	1	0	0	1	3000	0	0.0
Babylon	1	1	0	0	12000	11000	91.7
Kerbela	1	1	0	0	40000	40000	100.0
Wasit	0	0	0	0	0	0	0.0
Salah Al-Deen	2	2	0	0	27000	27000	100.0
Najaf	1	1	0	0	42000	32000	76.2
Qadisiya	1	1	0	0	12000	12000	100.0
Muthanna	0	0	0	0	0	0	0.0
Thi - Qar	1	0	1	0	18000	8000	44.4
Maysan	1	1	0	0	30000	30000	100.0
Basrah	1	0	1	0	144000	44000	30.6
Total	14	8	3	3	1008000	316000	31.3

*Data was changed after consultation with general sewage department / Ministry of Municipality and Public Works,

** No data available

Table (22)

Number of small sewage treatment units; actual and design capacities according to practical case and Governorate for the year 2005. *

Governorates	No. of small treatment units	No. of working units	No. of partially working units	No. of units out of work	Total design capacity M3 /day	Total actual capacity M3 /day	Percentage of actual capacity to design capacity
Nineveh	4	0	0	4	18000	0**	0.0
Sulaimaniya	0	0	0	0	0	0	0.0
Karkuk	5	4	0	1	1199	1199	100.0
Diala	1	0	0	1	70	0**	0.0
Anbar	3	0	0	3	7000	0**	0.0
Amant Baghdad	0	0	0	0	0	0	0.0
Baghdad outskirts	1	0	0	1	2880	0**	0.0
Babylon	2	0	2	0	120	100	83.3
Kerbela	0	0	0	0	0	0	0.0
Wasit	0	0	0	0	0	0	0.0
Salah Al-Deen	0	0	0	0	0	0	0.0
Najaf	2	0	2	0	0***	0***	0.0
Qadisiya	2	0	2	0	300****	500****	166.7
Muthanna	1	0	0	1	500	0**	0.0
Thi - Qar	3	0	3	0	250	150	60.0
Maysan	0	0	0	0	0	0	0.0
Basrah	0	0	0	0	0	0	0.0
Total	24	4	9	11	30019	1449	4.8

*Data was amended after consultation with general sewage department / Ministry of Municipality and Public Works

**No actual capacity data was available, because units are out of use.

***Design and actual capacity data for small sewage treatment units in Najaf governorate was not available, although they were asked to provide these data.

****The actual capacity of the small sewage treatment units is greater than the design capacity in Qadisiya governorate, because their limited number makes them overloaded all the time.

Table (23)/ to be continued

Type and number of treated and untreated polluting activities which drained to sewerage networks according to Governorate for the year 2005.

Governorates	No. of treated and untreated polluting activities according to type								
	Hospitals			Industrial establishments			Garages services		
	No.	No. of treated activities	No. of untreated activities	No.	No. of treated activities	No. of untreated activities	No.	No. of treated activities	No. of untreated activities
Nineveh	0	0	0	0	0	0	0	0	0
Sulaimaniya	12	12	0	2	2	0	20	15	5
Karkuk	0	0	0	0	0	0	0	0	0
Diala	0	0	0	0	0	0	0	0	0
Anbar	6	1	5	0	0	0	0	0	0
Amant Baghdad	99	0	99	469	10	459	52	52	0
Baghdad outskirts	0	0	0	0	0	0	0	0	0
Babylon	2	0	2	2	0	2	2	0	2
Kerbela	3	3	0	2	2	0	0	0	0
Wasit	0	0	0	0	0	0	0	0	0
Salah Al-Deen	0	0	0	0	0	0	0	0	0
Najaf	3	2	1	1	0	1	0	0	0
Qadisiya	2	0	2	0	0	0	0	0	0
Muthanna	0	0	0	0	0	0	0	0	0
Thi - Qar	2	0	2	0	0	0	0	0	0
Maysan	1	1	0	0	0	0	4	4	0
Basrah	16	0	16	120	0	120	75	0	75
Total	146	19	127	596	14	582	153	71	82

/ Table (23)

Type and number of treated and untreated polluting activities which drained to sewerage networks according to Governorate for the year 2005.

Governorates	No. of treated and untreated polluting activities according to type											
	Slaughterhouses			Agricultural activities			Others			Total of treated activities	Total of untreated activities	Total activities
	No.	No. of treated activities	No. of untreated activities	No.	No. of treated activities	No. of untreated activities	No.	No. of treated activities	No. of untreated activities			
Nineveh	0	0	0	0	0	0	0	0	0	0	0	0
Sulaimaniya	2	2	0	0	0	0	0	0	0	31	5	36
Karkuk	0	0	0	0	0	0	0	0	0	0	0	0
Diala	0	0	0	0	0	0	0	0	0	0	0	0
Anbar	0	0	0	0	0	0	0	0	0	1	5	6
Amant Baghdad	8	0	8	0	0	0	365	5	360	67	926	993
Baghdad outskirts	0	0	0	0	0	0	0	0	0	0	0	0
Babylon	0	0	0	0	0	0	0	0	0	0	6	6
Kerbela	0	0	0	0	0	0	0	0	0	5	0	5
Wasit	0	0	0	0	0	0	0	0	0	0	0	0
Salah Al-Deen	0	0	0	0	0	0	0	0	0	0	0	0
Najaf	0	0	0	0	0	0	0	0	0	2	2	4
Qadisiya	0	0	0	0	0	0	0	0	0	0	2	2
Muthanna	0	0	0	0	0	0	0	0	0	0	0	0
Thi - Qar	0	0	0	0	0	0	0	0	0	0	2	2
Maysan	0	0	0	0	0	0	0	0	0	5	0	5
Basrah	1	0	1	0	0	0	0	0	0	0	212	212
Total	11	2	9	0	0	0	365	5	360	111	1160	1271

Table (24)

Percentage of sewerage networks main problems according to Governorate for the year 2005.

Main problems	Number of Governorates	Percentages%
Inefficient networks	10	76.9
Poor and lack of maintenance	6	46.2
Shortage of technical and administrative staff	11	84.6
Shortage of vehicles	13	100.0
Problems concerning pumping stations	10	76.9
Old and inefficient sewage treatment stations	6	46.2
Shortage and instability of electric power that is necessary for operating sewage treatment and pumping	11	84.6
Connecting sewage networks with storm water networks	10	76.9
Lack of public awareness and net work abuse	13	100.0
Other problems	6	46.2

Note :No of Governorates that suffer from a problem or more is 13Governorates

Table (25)

Percentage of population using septic tanks according to Governorate for the year 2005.

Governorate	Total population	No. of population served by septic tanks	Percentage %
Nineveh	2637327	1608769	61.0
Sulaimaniya	1773100	0	0.0
Karkuk	870098	843995	97.0
Diala	1464437	1200838	82.0
Anbar	1379322	1186217	86.0
Amant Baghdad	5345099	1336275	25.0
Baghdad outskirts	1438888	1427377	99.2
Babylon	1544679	447957	29.0
Kerbela	819376	106519	13.0
Wasit	1001615	500808	50.0
Salah Al-Deen	1104935	1023170	92.6
Najaf	1011597	829510	82.0
Qadisiya	937261	403022	43.0
Muthanna	574351	333124	58.0
Thi - Qar	1518962	805050	53.0
Maysan	782826	469696	60.0
Basrah	1835399	789222	43.0
Total	26039272	13332107	51.2

Table (26)
Percentage of sites draining sewage water for houses uncovered by sewerage networks for the year 2005.

Drainage sites	No. of Governorates	Percentages%
Sent to sewage treatment station by tankers	4	26.7
Rivers	8	53.3
Nearby lands	13	86.7
Drainage	11	73.3
Others	2	13.3

*No. of Governorates using septic tanks system are (15) governorates excluding Sulaimaniya

Table(27)

Percentage of municipalities suffering from debris , construction waste and war residues; according to regions at national level for the year 2005.

Area	Percentage of municipalities suffering from debris , construction waste and war residues				Total
	No. of suffering municipalities	Percentage	No. of municipalities not suffering	Percentage	
Residential	122	43.0	162	57.0	100.0
Commercial	77	27.1	207	72.9	100.0
Industrial	80	28.2	204	71.8	100.0
Public parks	54	19.0	230	81.0	100.0
Main streets	74	26.1	210	73.9	100.0

Table(28)

Number of population served by garbage collection services; garbage quantity collected ; according to Governorate for the year 2005.

Governorate	Total population	No. of urban population	Number of population served by garbage collection services;	Percentage of population served to urban population	Percentage of population served to total population	Quantity of garbage collected ton/day
Nineveh	2637327	1607788	1546692	96.2	58.6	1540.7
Sulaimaniya	1773100	1248380	1188458	95.2	67.0	1275.4
Karkuk	870098	603971	157032	26	18.0	535.7
Diala	1464437	608338	357094	58.7	24.4	759.2
Anbar	1379322	715493	470079	65.7	34.1	497.7
Amant Baghdad	5345099	5345099	4917491	92	92.0	9510.0
Baghdad outskirts	1438888	1438888	890672	61.9	61.9	436.9
Babylon	1544679	728068	557700	76.6	36.1	902.9
Kerbela	819376	532756	531158	99.7	64.8	443.3
Wasit	1001615	524453	346139	66	34.6	497.3
Salah Al-Deen	1104935	509739	445002	87.3	40.3	1146.1
Najaf	1011597	696504	598993	86	59.2	4029.2
Qadisiya	937261	488615	416789	85.3	44.5	2174.8
Muthanna	574351	253596	199834	78.8	34.8	434.4
Thi - Qar	1518962	884079	684277	77.4	45.0	156.2
Maysan	782826	509551	181400	35.6	23.2	186.8
Basrah	1835399	1441984	986317	68.4	53.7	1179.3
Total	26039272	18137302	14475127	79.8	55.6	14920.6

Note: Collected garbage includes solid waste, construction waste and scrub according to general municipality department data

Table(29)

Number of garbage containers distributed to regions according to Governorate for the year 2005.

Governorate	Number of garbage containers distributed according to regions						Total number of containers
	Residential	Commercial	Institutional	Industrial	Public parks	Main streets	
Nineveh	118	57	21	2	0	14	211
Sulaimaniya	58	16	15	8	1	0	98
Karkuk	62	16	34	6	0	12	131
Diala	110	24	13	4	3	15	170
Anbar	94	0	0	11	6	17	128
Amant Baghdad	689	250	426	34	25	202	1626
Baghdad outskirts	25	2	6	2	1	5	41
Babylon	106	48	19	6	1	14	195
Kerbela	37	0	14	2	0	4	57
Wasit	19	9	4	2	2	32	67
Salah Al-Deen	79	15	18	3	1	0	116
Najaf	56	21	9	1	3	17	106
Qadisiya	40	15	21	1	3	15	95
Muthanna	213	30	18	0	43	27	331
Thi - Qar	51	15	18	1	3	15	103
Maysan	39	5	12	0	2	2	60
Basrah	10	20	0	0	0	0	30
Total	1807	542	647	84	95	391	3565

Note: Data was taken from general municipality department .

Table(30)

Percentage of garbage containers distributed to regions according to Governorate for the year 2005.

Governorate	Percentage of garbage containers distributed according to regions						
	Residential	Commercial	Institutional	Industrial	Public parks	Main streets	Percentage
Nineveh	55.7	26.9	9.9	0.8	0.0	6.7	5.9
Sulaimaniya	59.2	16.3	15.3	8.2	1.0	0.0	2.7
Karkuk	47.6	11.9	26.2	4.8	0.0	9.5	3.7
Diala	64.9	14.0	7.9	2.6	1.8	8.8	4.8
Anbar	73.2	0.0	0.3	8.6	4.3	13.6	3.6
Amant Baghdad	42.4	15.4	26.2	2.1	1.5	12.4	45.6
Baghdad outskirts	61.3	5.8	14.3	4.0	3.4	11.3	1.2
Babylon	54.5	24.8	9.6	3.3	0.6	7.2	5.5
Kerbela	65.5	0.0	24.1	3.4	0.0	6.9	1.6
Wasit	27.7	13.4	6.2	2.9	2.7	47.1	1.9
Salah Al-Deen	67.8	13.3	15.6	2.2	1.1	0.0	3.3
Najaf	53.2	19.4	8.1	1.1	2.6	15.6	3.0
Qadisiya	42.4	15.4	22.0	1.1	3.6	15.4	2.7
Muthanna	64.4	9.0	5.3	0.0	13.1	8.2	9.3
Thi - Qar	49.4	14.6	17.1	1.3	3.2	14.6	2.9
Maysan	65.4	7.7	19.2	0.0	3.8	3.8	1.7
Basrah	33.3	66.7	0.0	0.0	0.0	0.0	0.8
Total	50.7	15.2	18.1	2.3	2.7	11.0	100.0

Table(31)

Percentage of containers used by population . No. of weekly garbage disposal and percentage of garbage separation at household level according to Governorate for the year 2005.

Governorate	Percentage of containers used by population				Average weekly no. of containers unloading			Percentage of garbage separation at household level		
	Yes	Sometimes	No	Summation	Small containers 1M3 /day	Moderate containers 6M3 /day	Large containers 8M3 /day	Yes	Sometimes	No
Nineveh	48.0	36.0	16.0	100.0	4.8	1.3	1.9	0.0	100.0	100.0
Sulaimaniya	18.2	3.6	78.2	100.0	1.0	3.6	3.8	60.0	40.0	100.0
Karkuk	0.0	50.0	50.0	100.0	2.0	0.0	2.5	0.0	100.0	100.0
Diala	19.0	47.6	33.3	100.0	4.2	3.2	2.6	0.0	100.0	100.0
Anbar	28.6	14.3	57.1	100.0	1.0	1.5	1.0	0.0	100.0	100.0
Amant Baghdad	18.2	81.8	0.0	100.0	6.0	2.7	2.7	0.0	100.0	100.0
Baghdad outskirts	7.7	46.2	46.2	100.0	3.8	3.3	2.0	0.0	100.0	100.0
Babylon	13.3	60.0	26.7	100.0	7.4	5.4	2.0	0.0	100.0	100.0
Kerbela	0.0	57.1	42.9	100.0	0.0	0.0	2.0	0.0	100.0	100.0
Wasit	17.6	52.9	29.4	100.0	1.0	5.4	2.3	0.0	100.0	100.0
Salah Al-Deen	11.8	35.3	52.9	100.0	0.0	1.5	2.6	0.0	100.0	100.0
Najaf	44.4	55.6	0.0	100.0	6.3	1.0	3.5	0.0	100.0	100.0
Qadisiya	6.7	66.7	26.7	100.0	5.7	0.0	2.1	0.0	100.0	100.0
Muthanna	0.0	45.5	54.5	100.0	7.0	14.0	1.8	0.0	100.0	100.0
Thi - Qar	10.5	42.1	47.4	100.0	6.3	1.0	2.4	0.0	100.0	100.0
Maysan	0.0	53.3	46.7	100.0	4.0	2.0	2.4	0.0	100.0	100.0
Basrah	0.0	13.3	86.7	100.0	0.0	1.5	0.0	0.0	100.0	100.0
Total	15.8	38.4	45.8	100.0	5.0	2.9	2.3	11.6	88.4	100.0

Table(32)

Number of municipalities having instruments to collect garbage ; number of pressing trucks, hired vehicles, sufficiency, and average no. of garbage collection per week according to Governorate for the year 2005.

Governorate	Number of municipalities having instruments and equipments to collect garbage			Number of pressing trucks		Number of hired vehicles	Number of municipalities having sufficient instruments to cover their services			Average of garbage collection per week
	Having facilities	Not having facilities	Total	Working	Out of use		Sufficient facilities	Insufficient facilities	Total	
Nineveh	25	0	25	146	33	76	3	22	25	4.1
Sulaimaniya	53	2	55	127	27	61	16	39	55	4.2
Karkuk	12	0	12	25	3	11	0	12	12	3.8
Diala	21	0	21	83	45	49	3	18	21	4.6
Anbar	6	1	7	71	17	5	0	6	7	1.1
Amant Baghdad	11	0	11	379	80	970	0	11	11	6.0
Baghdad outskirts	11	2	13	30	11	17	2	11	13	4.4
Babylon	15	0	15	41	5	96	2	13	15	5.6
Kerbela	7	0	7	26	4	98	0	7	7	5.3
Wasit	15	2	17	44	9	57	0	15	17	4.7
Salah Al-Deen	17	0	17	40	31	27	3	14	17	3.8
Najaf	9	0	9	47	13	166	1	8	9	4.6
Qadisiya	15	0	15	35	8	17	0	15	15	4.9
Muthanna	11	0	11	15	8	35	0	11	11	4.5
Thi - Qar	19	0	19	36	16	2	0	19	19	3.2
Maysan	13	2	15	37	7	38	0	13	15	3.1
Basrah	15	0	15	50	9	95	0	15	15	3.0
Total	275	9	284	1232	326	1820	30	249	284	4.2

Table(33)

Percentage of municipalities having facilities to collect garbage; number of pressing trucks, vehicles, hired facilities, sufficiency, according to Governorate for the year 2005.

Governorate	Percentage of municipalities having facilities to collect garbage			Percentage of Pressing trucks			Percentage of vehicles and hired facilities	Percentage of municipalities having facilities to collect garbage		
	Having facilities	Not having facilities	Sum.	Working	Out of use	Sum.		Sufficient facility	Insufficient facility	Sum.
Nineveh	100.0	0.0	100.0	81.6	18.4	100.0	4.2	12.0	88.0	100.0
Sulaimaniya	96.4	3.6	100.0	82.5	17.5	100.0	3.4	29.1	70.9	100.0
Karkuk	100.0	0.0	100.0	89.3	10.7	100.0	0.6	0.0	100.0	100.0
Diala	100.0	0.0	100.0	64.8	35.2	100.0	2.7	14.3	85.7	100.0
Anbar	85.7	14.3	100.0	80.7	19.3	100.0	0.3	0.0	100.0	100.0
Amant Baghdad	100.0	0.0	100.0	82.6	17.4	100.0	53.3	0.0	100.0	100.0
Baghdad outskirts	84.6	15.4	100.0	73.2	26.8	100.0	0.9	15.4	84.6	100.0
Babylon	100.0	0.0	100.0	89.1	10.9	100.0	5.3	13.3	86.7	100.0
Kerbela	100.0	0.0	100.0	86.7	13.3	100.0	5.4	0.0	100.0	100.0
Wasit	88.2	11.8	100.0	83.0	17.0	100.0	3.1	0.0	100.0	100.0
Salah Al-Deen	100.0	0.0	100.0	56.3	43.7	100.0	1.5	17.6	82.4	100.0
Najaf	100.0	0.0	100.0	78.3	21.7	100.0	9.1	11.1	88.9	100.0
Qadisiya	100.0	0.0	100.0	81.4	18.6	100.0	0.9	0.0	100.0	100.0
Muthanna	100.0	0.0	100.0	65.2	34.8	100.0	1.9	0.0	100.0	100.0
Thi - Qar	100.0	0.0	100.0	69.2	30.8	100.0	0.1	0.0	100.0	100.0
Maysan	86.7	13.3	100.0	84.1	15.9	100.0	2.1	0.0	100.0	100.0
Basrah	100.0	0.0	100.0	84.7	15.3	100.0	5.2	0.0	100.0	100.0
Total	96.8	3.2	100.0	79.1	20.9	100.0	100.0	10.8	89.2	100.0

Table (34)

Number of municipalities suffering from debris, construction waste; and war residues; according to areas and Governorate for the year 2005.

Governorate	Number of municipalities suffering from debris, construction waste; and war residues in different areas														
	Residential			Commercial			Industrial			Public parks			Main streets		
	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.
Nineveh	5	20	25	2	23	25	3	22	25	2	23	25	4	21	25
Sulaimaniya	10	45	55	4	51	55	2	53	55	1	54	55	3	52	55
Karkuk	4	8	12	2	10	12	2	10	12	1	11	12	2	10	12
Diala	3	18	21	3	18	21	2	19	21	1	20	21	3	18	21
Anbar	4	3	7	5	2	7	4	3	7	4	3	7	6	1	7
Amant Baghdad	10	1	11	6	5	11	8	3	11	3	8	11	6	5	11
Baghdad outskirts	8	5	13	7	6	13	6	7	13	5	8	13	4	9	13
Babylon	12	3	15	8	7	15	10	5	15	4	11	15	5	10	15
Kerbela	3	4	7	4	3	7	4	3	7	3	4	7	3	4	7
Wasit	8	9	17	4	13	17	4	13	17	2	15	17	2	15	17
Salah Al-Deen	9	8	17	6	11	17	5	12	17	7	10	17	10	7	17
Najaf	5	4	9	1	8	9	2	7	9	1	8	9	2	7	9
Qadisiya	11	4	15	6	9	15	7	8	15	4	11	15	6	9	15
Muthanna	2	9	11	1	10	11	0	11	11	0	11	11	0	11	11
Thi - Qar	7	12	19	4	15	19	4	15	19	4	15	19	4	15	19
Maysan	10	5	15	4	11	15	7	8	15	3	12	15	5	10	15
Basrah	11	4	15	10	5	15	10	5	15	9	6	15	9	6	15
Total	122	162	284	77	207	284	80	204	284	54	230	284	74	210	284

Table(35)

Percentage of municipalities suffering from debris, construction waste; and war residues; according to areas and Governorate for the year 2005.

Governorate	Percentage of municipalities suffering from debris, construction waste; and war residues														
	Residential			Commercial			Industrial			Public parks			Main streets		
	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.	Suffering	Not suffering	Sum.
Nineveh	20.0	80.0	100.0	8.0	92.0	100.0	12.0	88.0	100.0	8.0	92.0	100.0	16.0	84.0	100.0
Sulaimaniya	18.2	81.8	100.0	7.3	92.7	100.0	3.6	96.4	100.0	1.8	98.2	100.0	5.5	94.5	100.0
Karkuk	33.3	66.7	100.0	16.7	83.3	100.0	16.7	83.3	100.0	8.3	91.7	100.0	16.7	83.3	100.0
Diala	14.3	85.7	100.0	14.3	85.7	100.0	9.5	90.5	100.0	4.8	95.2	100.0	14.3	85.7	100.0
Anbar	57.1	42.9	100.0	71.4	28.6	100.0	57.1	42.9	100.0	57.1	42.9	100.0	85.7	14.3	100.0
Amant Baghdad	90.9	9.1	100.0	54.5	45.5	100.0	72.7	27.3	100.0	27.3	72.7	100.0	54.5	45.5	100.0
Baghdad outskirts	61.5	38.5	100.0	53.8	46.2	100.0	46.2	53.8	100.0	38.5	61.5	100.0	30.8	69.2	100.0
Babylon	80.0	20.0	100.0	53.3	46.7	100.0	66.7	33.3	100.0	26.7	73.3	100.0	33.3	66.7	100.0
Kerbela	42.9	57.1	100.0	57.1	42.9	100.0	57.1	42.9	100.0	42.9	57.1	100.0	42.9	57.1	100.0
Wasit	47.1	52.9	100.0	23.5	76.5	100.0	23.5	76.5	100.0	11.8	88.2	100.0	11.8	88.2	100.0
Salah Al-Deen	52.9	47.1	100.0	35.3	64.7	100.0	29.4	70.6	100.0	41.2	58.8	100.0	58.8	41.2	100.0
Najaf	55.6	44.4	100.0	11.1	88.9	100.0	22.2	77.8	100.0	11.1	88.9	100.0	22.2	77.8	100.0
Qadisiya	73.3	26.7	100.0	40.0	60.0	100.0	46.7	53.3	100.0	26.7	73.3	100.0	40.0	60.0	100.0
Muthanna	18.2	81.8	100.0	9.1	90.9	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Thi - Qar	36.8	63.2	100.0	21.1	78.9	100.0	21.1	78.9	100.0	21.1	78.9	100.0	21.1	78.9	100.0
Maysan	66.7	33.3	100.0	26.7	73.3	100.0	46.7	53.3	100.0	20.0	80.0	100.0	33.3	66.7	100.0
Basrah	73.3	26.7	100.0	66.7	33.3	100.0	66.7	33.3	100.0	60.0	40.0	100.0	60.0	40.0	100.0
Total	43.0	57.0	100.0	27.1	72.9	100.0	28.2	71.8	100.0	19.0	81.0	100.0	26.1	73.9	100.0

Table(36)

Number of municipalities carrying out town cleaning services and average number of cleaning cycles, according to areas and Governorate for the year 2005.

Governorate	Number of municipalities carrying out town cleaning services									Average no.of cleaning cycles		
	Streets			Parks			Markets			Streets	Parks	Markets
	Yes	No	Sum.	Yes	No	Sum.	Yes	No	Sum.			
Nineveh	25	0	25	19	6	25	25	0	25	4.5	2.1	5.9
Sulaimaniya	53	2	55	41	14	55	52	3	55	4.6	4.0	4.2
Karkuk	10	2	12	7	5	12	10	2	12	4.0	1.5	4.8
Diala	19	2	21	13	8	21	19	2	21	4.7	2.0	5.4
Anbar	7	0	7	4	3	7	7	0	7	1.8	0.7	2.4
Amant Baghdad	11	0	11	11	0	11	11	0	11	7.0	5.9	7.0
Baghdad outskirts	11	2	13	10	3	13	11	2	13	4.7	2.2	4.5
Babylon	15	0	15	14	1	15	15	0	15	6.1	2.5	6.7
Kerbela	7	0	7	7	0	7	6	1	7	5.7	4.0	4.0
Wasit	16	1	17	13	4	17	15	2	17	4.0	2.5	5.4
Salah Al-Deen	17	0	17	14	3	17	16	1	17	5.4	1.8	5.8
Najaf	9	0	9	9	0	9	9	0	9	7.6	5.4	6.8
Qadisiya	15	0	15	15	0	15	15	0	15	5.8	3.7	6.2
Muthanna	11	0	11	10	1	11	11	0	11	6.8	4.6	6.8
Thi - Qar	19	0	19	19	0	19	19	0	19	5.4	4.1	6.3
Maysan	14	1	15	14	1	15	14	1	15	3.8	3.0	4.4
Basrah	14	1	15	11	4	15	13	2	15	3.4	2.2	3.8
Total	273	11	284	231	53	284	268	16	284	5.0	3.1	5.3

Table (37)

Percentage of town cleaning services and average no. of cleaning cycles , according to areas and Governorate for the year 2005.

Governorate	Percentage of cleaning services									Average rate of cleaning		
	Streets			Parks			Markets			Streets	Parks	Markets
	Yes	No	Sum.	Yes	No	Sum.	Yes	No	Sum.			
Nineveh	100.0	0.0	100.0	76.0	24.0	100.0	100.0	0.0	100.0	4.5	2.1	5.9
Sulaimaniya	96.4	3.6	100.0	74.5	25.5	100.0	94.5	5.5	100.0	4.6	4.0	4.2
Karkuk	83.3	16.7	100.0	58.3	41.7	100.0	83.3	16.7	100.0	4.0	1.5	4.8
Diala	90.5	9.5	100.0	61.9	38.1	100.0	90.5	9.5	100.0	4.7	2.0	5.4
Anbar	100.0	0.0	100.0	57.1	42.9	100.0	100.0	0.0	100.0	1.8	0.7	2.4
Amant Baghdad	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	7.0	5.9	7.0
Baghdad outskirts	84.6	15.4	100.0	76.9	23.1	100.0	84.6	15.4	100.0	4.7	2.2	4.5
Babylon	100.0	0.0	100.0	93.3	6.7	100.0	100.0	0.0	100.0	6.1	2.5	6.7
Kerbela	100.0	0.0	100.0	100.0	0.0	100.0	85.7	14.3	100.0	5.7	4.0	4.0
Wasit	94.1	5.9	100.0	76.5	23.5	100.0	88.2	11.8	100.0	4.0	2.5	5.4
Salah Al-Deen	100.0	0.0	100.0	82.4	17.6	100.0	94.1	5.9	100.0	5.4	1.8	5.8
Najaf	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	7.6	5.4	6.8
Qadisiya	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	5.8	3.7	6.2
Muthanna	100.0	0.0	100.0	90.9	9.1	100.0	100.0	0.0	100.0	6.8	4.6	6.8
Thi - Qar	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	5.4	4.1	6.3
Maysan	93.3	6.7	100.0	93.3	6.7	100.0	93.3	6.7	100.0	3.8	3.0	4.4
Basrah	93.3	6.7	100.0	73.3	26.7	100.0	86.7	13.3	100.0	3.4	2.2	3.8
Total	96.1	3.9	100.0	81.3	18.7	100.0	94.4	5.6	100.0	5.0	3.1	5.3

Table (38)

Percentage of garbage treatment methods according to Governorate for the year 2005.

Governorate	Transportating to transfer station	Burying in allocated sanitary sites	Disposing in empty lots	Incineration	Disposal to rivers and drains	Recycling	Selling to non Licensed contractors	Others
Nineveh	12.0	100.0	0.0	0.0	12.0	0.0	0.0	0.0
Sulaimaniya	0.0	41.8	58.2	0.0	27.3	3.6	0.0	0.0
Karkuk	8.3	0.0	41.7	0.0	16.7	0.0	0.0	66.7
Diala	42.9	57.1	9.5	0.0	0.0	4.8	0.0	0.0
Anbar	14.3	42.9	71.4	0.0	0.0	0.0	0.0	0.0
Amant Baghdad	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baghdad outskirts	23.1	0.0	46.2	0.0	7.7	0.0	0.0	15.4
Babylon	53.3	6.7	33.3	0.0	0.0	0.0	0.0	26.7
Kerbela	14.3	85.7	14.3	0.0	0.0	0.0	0.0	14.3
Wasit	23.5	76.5	17.6	0.0	11.8	5.9	0.0	0.0
Salah Al-Deen	0.0	0.0	70.6	0.0	17.6	0.0	0.0	35.3
Najaf	66.7	11.1	11.1	0.0	22.2	0.0	0.0	22.2
Qadisiya	40.0	6.7	46.7	0.0	20.0	0.0	0.0	6.7
Muthanna	0.0	9.1	100.0	0.0	0.0	0.0	0.0	0.0
Thi - Qar	31.6	57.9	36.8	0.0	0.0	0.0	0.0	10.5
Maysan	6.7	6.7	93.3	0.0	20.0	0.0	0.0	0.0
Basrah	6.7	86.7	6.7	0.0	6.7	0.0	0.0	0.0
Total	21.5	39.1	39.4	0.0	12.3	1.4	0.0	9.2

Table(39)

Number of sanitary landfill sites; environmentally conformed and unconformed; and their percentages; number and area of transferring stations according to Governorate for the year 2005.

Governorate	No. of sanitary land fill sites	No. of sites within the environmental standards		No. of sites out of the environmental standards		No. of transferring station	
		No.	Percentage	No.	Percentage	No.	Area (donume)
Nineveh	24	16	66.7	8	33.3	3	29
Sulaimaniya	29	22	75.9	7	24.1	0	0
Karkuk	12	7	58.3	5	41.7	1	25
Diala	19	15	78.9	4	21.1	9	43
Anbar	20	14	70.0	6	30.0	2	7
Amant Baghdad	3	1	33.3	2	66.7	12	20
Baghdad outskirts	10	0	0.0	10	100.0	4	42
Babylon	10	9	90.0	1	10.0	8	68
Kerbela	7	4	57.1	3	42.9	2	18
Wasit	15	9	60.0	6	40.0	3	11
Salah Al-Deen	12	7	58.3	5	41.7	0	0
Najaf	8	5	62.5	3	37.5	6	208
Qadisiya	15	15	100.0	0	0.0	5	36
Muthanna	8	6	75.0	2	25.0	0	0
Thi - Qar	18	16	88.9	2	11.1	10	7
Maysan	12	10	83.3	2	16.7	3	4
Basrah	15	11	73.3	4	26.7	1	1
Total	237	167	70.5	70	29.5	69	519

* Data was taken from General municipality department /Ministry of Municipalities and Public Works

Table(40)

Percentage of garbage landfill sites, according to municipality's design, and the rates of level of ground water rise at the landfill sites according to the Governorate for the year 2005

Governorate	Percentage of garbage landfills sites, according to municipality's essential design			Average ground water level (1)m
	Within the basic design	Out of the basic design	Total	
Nineveh	4.0	96.0	100.0	13.3
Sulaimaniya	0.0	100.0	100.0	38.9
Karkuk	0.0	0.0	100.0	0.0
Diala	0.0	100.0	100.0	22.3
Anbar	0.0	100.0	100.0	17.3
Amant Baghdad	33.3	66.7	100.0	3.9
Baghdad outskirts	0.0	100.0	100.0	4.0
Babylon	0.0	100.0	100.0	5.0
Kerbela	0.0	100.0	100.0	1.5
Wasit	0.0	100.0	100.0	2.6
Salah Al-Deen	0.0	0.0	100.0	0.0
Najaf	0.0	100.0	100.0	8.0
Qadisiya	0.0	100.0	100.0	1.7
Muthanna	0.0	100.0	100.0	1.0
Thi - Qar	0.0	100.0	100.0	1.3
Maysan	0.0	100.0	100.0	1.0
Basrah	0.0	100.0	100.0	2.2
Total	1.6	98.4	100.0	8.3

Table(41)

Percentage of landfill sites having full necessary facilities according to Governorate for the year 2005.

Governorate	Fence			Suitable roads to ensure easy transport of garbage			Administration and monitoring office			Scale			Equipments and tools used for dumping		
	Yes	No	Sum.	Yes	No	Sum.	Yes	No	Sum.	Yes	No	Sum.	Yes	No	Sum.
Nineveh	4.2	95.8	100.0	76.0	24.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	20.0	80.0	100.0
Sulaimaniya	6.9	93.1	100.0	93.1	6.9	100.0	0.0	100.0	100.0	0.0	100.0	100.0	6.9	93.1	100.0
Karkuk	8.3	91.7	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diala	21.1	78.9	100.0	84.6	15.4	100.0	0.0	100.0	100.0	0.0	100.0	100.0	7.7	92.3	100.0
Anbar	100.0	0.0	100.0	0.0	100.0	100.0	33.3	66.7	100.0	0.0	100.0	100.0	33.3	66.7	100.0
Amant Baghdad	33.3	66.7	100.0	100.0	0.0	100.0	66.7	33.3	100.0	66.7	33.3	100.0	66.7	33.3	100.0
Baghdad outskirts	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Babylon	0.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0
Kerbela	14.3	85.7	100.0	66.7	33.3	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Wasit	93.3	6.7	100.0	61.5	38.5	100.0	15.4	84.6	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Salah Al-Deen	25.0	75.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Najaf	0.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0
Qadisiya	0.0	100.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Muthanna	12.5	87.5	100.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Thi - Qar	5.6	94.4	100.0	72.7	27.3	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Maysan	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0
Basrah	33.3	66.7	100.0	84.6	15.4	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
Total	28.1	71.9	100.0	74.4	25.6	100.0	5.4	94.6	100.0	1.6	98.4	100.0	10.9	89.1	100.0

*Data was taken from General municipality department / Ministry of Municipalities and Public works

Table(42)

Percentage of main problems that municipalities services sector suffers from, in garbage collecting, according to Governorate for the year 2005.

Governorate	Main problems								
	Shortage of vehicles ...etc	No vehicle available	Poor and lack of maintenance	Shortage of spare parts	Shortage of employees	Insufficient wages	Shortage in requirments	Lack of public awareness	Other problems
Nineveh	100.0	32.0	52.0	52.0	88.0	32.1	92.0	88.0	20.0
Sulaimaniya	70.9	12.7	16.4	14.5	70.9	76.4	32.7	49.1	1.8
Karkuk	91.7	25.0	25.0	33.3	100.0	47.2	91.7	91.7	8.3
Diala	81.0	33.3	19.0	9.5	95.2	15.7	85.7	85.7	28.6
Anbar	100.0	28.6	57.1	42.9	57.1	40.4	85.7	100.0	28.6
Amant Baghdad	90.9	36.4	63.6	54.5	36.4	21.4	81.8	100.0	54.5
Baghdad outskirts	76.9	46.2	30.8	30.8	69.2	29.0	69.2	84.6	53.8
Babylon	86.7	40.0	26.7	40.0	93.3	44.0	100.0	26.7	13.3
Kerbela	85.7	42.9	28.6	28.6	57.1	27.0	100.0	100.0	0.0
Wasit	94.1	58.8	35.3	35.3	94.1	33.3	82.4	64.7	5.9
Salah Al-Deen	76.5	52.9	29.4	41.2	88.2	41.6	88.2	100.0	5.9
Najaf	88.9	22.2	33.3	44.4	88.9	36.7	88.9	100.0	11.1
Qadisiya	100.0	33.3	26.7	20.0	93.3	47.2	93.3	73.3	0.0
Muthanna	36.4	54.5	45.5	27.3	81.8	47.2	90.9	100.0	0.0
Thi - Qar	100.0	63.2	21.1	31.6	73.7	24.8	100.0	73.7	0.0
Maysan	80.0	66.7	26.7	33.3	100.0	44.0	100.0	100.0	13.3
Basrah	86.7	93.3	93.3	93.3	100.0	40.9	93.3	100.0	46.7
Total	83.8	40.1	33.5	33.8	82.4	74.6	79.2	77.8	14.8

Table(43)

Number of employees working in municipalities sector according to Governorate for the year 2005.

Governorate	Engineer		Technical monitoring		Technician		Administrator		Un skilled worker		Total		Total Sum.
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	
Nineveh	166	1	116	26	437	32	520	36	154	2540	1393	2635	4028
Sulaimaniya	325	0	428	1	797	1	872	0	5712	81	8134	83	8217
Karkuk	104	3	174	5	49	8	394	16	267	587	988	619	1607
Diala	85	6	64	10	58	3	371	15	68	356	646	390	1036
Anbar	38	1	40	16	89	7	182	11	220	307	569	342	911
Amant Baghdad	384	55	367	171	1096	116	2034	238	1017	136	4898	716	5614
Baghdad outskirts	69	13	32	14	127	20	326	73	98	166	652	286	938
Babylon	95	3	39	10	219	0	779	1	450	156	1582	170	1752
Kerbela	84	0	59	16	49	0	370	0	171	757	733	773	1506
Wasit	25	0	61	16	71	5	283	2	248	511	688	534	1222
Salah Al-Deen	57	11	53	7	175	13	313	21	154	98	752	150	902
Najaf	45	3	67	12	37	13	102	6	375	851	626	885	1511
Qadisiya	65	4	75	8	304	2	458	6	530	233	1432	253	1685
Muthanna	46	0	28	2	42	0	316	0	73	46	505	48	553
Thi - Qar	68	5	53	12	205	15	271	20	542	350	1139	402	1541
Maysan	31	1	51	4	216	5	370	5	747	114	1415	129	1544
Basrah	30	3	137	12	96	0	439	5	674	1082	1376	1103	2479
Total	1717	109	1844	342	4067	240	8400	455	11500	8371	27528	9517	37045

Table(44) to be continued

Number of facilities and tools available in the municipality according to Governorate for the year 2005.

Governorate	Garbage presser		Trailer		Dumper		Shovel		Tipped truck	
	No.	Average capacity (ton)	No.	Average capacity (ton)	No.	Average capacity (ton)	No.	Average capacity (ton)	No.	Average capacity (ton)
Nineveh	179	7.3	58	5.0	4	1.3	22	2.3	44	14.0
Sulaimaniya	154	7.5	120	4.3	67	1.0	43	1.9	64	12.3
Karkuk	28	7.5	20	5.0	2	1.0	17	2.4	25	13.3
Diala	128	7.5	47	4.9	6	1.0	24	1.9	45	11.8
Anbar	88	8.0	14	4.3	0	0.0	13	1.5	18	11.8
Amant Baghdad	459	7.8	21	4.3	0	0.0	62	1.8	42	16.0
Baghdad outskirts	41	7.2	26	4.2	4	1.0	14	2.0	18	15.6
Babylon	46	7.6	36	4.8	2	1.0	17	2.2	30	15.0
Kerbela	30	8.0	29	3.8	2	1.0	9	2.0	24	14.6
Wasit	52	6.2	46	5.0	3	1.7	16	2.0	38	13.4
Salah Al-Deen	71	7.3	46	5.0	5	1.0	21	2.1	42	12.2
Najaf	60	6.2	53	4.7	1	1.0	18	2.0	47	11.6
Qadisiya	44	7.3	34	4.5	12	1.0	11	1.4	29	15.0
Muthanna	23	8.0	17	5.0	2	1.0	15	2.0	19	12.0
Thi - Qar	52	7.8	56	3.5	2	1.0	17	2.5	46	12.9
Maysan	44	7.2	36	4.7	1	1.0	24	2.4	20	12.2
Basrah	59	7.1	31	5.0	0	0.0	19	2.7	52	15.7
Total	1558	7.4	690	4.6	113	1.1	362	2.1	603	13.5

Table (44)

Number of facilities and tools available in the municipality according to Governorate for the year 2005.

Governorate	Containers (No.)	Sewage jet truck		Vacuumed		Bulldozer no.	Container crane no.	Roller no.	Total
		No.	Average capacity (litre)	No.	Average capacity (litre)				
Nineveh	211	0	0.0	4	7250.0	16	25	26	589
Sulaimaniya	98	2	7500.0	3	5000.0	9	11	27	598
Karkuk	131	0	0.0	0	0.0	2	9	13	247
Diala	170	0	0.0	3	9000.0	7	17	18	465
Anbar	128	0	0.0	2	6500.0	6	3	14	286
Amant Baghdad	1626	81	7273.0	106	8590.0	3	29	8	2437
Baghdad outskirts	41	0	0.0	5	5000.0	11	14	32	206
Babylon	195	0	0.0	0	0.0	5	11	5	347
Kerbela	57	0	0.0	1	8000.0	5	4	8	169
Wasit	67	0	0.0	0	0.0	8	4	15	249
Salah Al-Deen	116	0	0.0	4	7000.0	11	14	19	349
Najaf	106	0	0.0	5	5000.0	5	10	18	323
Qadisiya	95	0	0.0	3	8333.0	4	8	4	244
Muthanna	331	0	0.0	0	0.0	2	7	20	436
Thi - Qar	103	0	0.0	4	11500.0	5	12	15	312
Maysan	60	1	5000.0	5	5250.0	5	5	7	208
Basrah	30	0	0.0	0	0.0	10	3	2	206
Total	3565	84	6591.0	145	7201.9	114	186	251	7671

*Data was taken from General municipality department / Ministry of Municipalities and Public works.