

Introduction

Environment is a set of physical and biological factors along with their interactions that affect the behaviors and growth of organisms. Thus, the environment is beyond the set of natural, biological, and non-biological factors and also includes the interaction between humans and nature. By considering the fact that in the 21st century, environmental protection is one of the Millennium Development Goals (MDGs) and one of the three principles of sustainable development (environmental sustainability, economic sustainability, and social sustainability) and due to its increasing importance and impacts on other socio-economic activities, a separate chapter on "Environment Statistics" was dedicated to this issue in the Iran Statistical Yearbook since the year 1392. The natural environment is affected by human activities in different forms. These impacts on the three constituting factors of the environment are as follows:

Water

The most important impacts of human activities on the water are summarized in three ways: water overuse, depletion of water resources, and pollution of surface and underground waters.

The quality of water is another challenge countries face. The pollution amount of some waters and its progressive trend is worrying. The groundwaters, lakes, and springs are the main resources of freshwaters that are directly subject to pollution through human activities.

Soil

The most important impacts of human activities on soil are: soil poisoning and erosion which lead to destruction and decrease of arable lands capacity; overall, soil erosion is a natural process that occurs

by wind or water flows, and temperature changes. However, human activities such as intense farming, irrigation of farmlands, mono-cropping, overgrazing, deforestation, and desertification lead to an imbalance between soil formation and its degradation processes, and finally soil pollution.

Air

Air pollution is the direct or indirect introduction of every material by humans, possibly causing undesirable impacts on human health and the environment.

The information presented in this chapter includes statistics of natural resources; national heritage, forests, ranges, and deserts; the amount of distributed fertilizers; sold pesticides; emission of pollutants; activities of urban and industrial sewage; and the environmental specifications of health and medical centres.

The statistics on natural resources protected by the Iran Department of Environment included in the Chapter "Land and Climate" from the year 1368 to the year 1390 and the statistics on forests, ranges, and deserts and the statistics on the amount of distributed fertilizers; and sold pesticides which were presented in the Chapter "Agriculture, Forestry, and Fisheries" of the Iran Statistical Yearbook, are presented in the Environment Chapter due to its closer relationship with the environment sector since the year 1392. This Chapter also contains the statistics of emission of pollutants and greenhouse gases resulted from the burning of different types of fuels, which have been published in the Energy Balance Sheet of the Ministry of Energy since the year 1377.

This Chapter also includes the statistics produced by the "National Water and Wastewater

Engineering Corporation", "the Ministry of Industry, Mine and Trade" and the" Ministry of Health, Treatment, and Medical Education."

Definitions and Concepts

National parks: an area of the nation's natural resources such as jungles, pastures, natural coppices, woodlands, plains, water and mountainous regions which presents distinguished samples of Iran's natural manifestations and is protected in order to provide sustainable preservation of its natural and diverse conditions and create a suitable environment for reproduction, and breeding of wildlife and growth of plants in a completely natural condition.

Wildlife habitats: an area of the nation's natural resources such as jungles, pastures, natural coppices, woodlands, plains, water and mountainous regions which has typical natural habitats, and special ecological conditions for wildlife and is protected in order to preserve or rehabilitate these protected habitats.

Nature reserves: protected areas of the country's nature, including jungles, pastures, plains, or mountainous regions which are important for preserving and reproduction of wild animals or rehabilitation of plantations or natural conditions.

National natural heritages: specific and rare species of plants or animal and unique picturesque settings or views, specific natural forms of the earth as well as very old trees that are protected in an appropriate area.

Greenhouse gases: The vapor of H₂O, CO₂, NO₂, CH₄, O₃, HFCs, and PFCs are called greenhouse gases.

Range: a land, be it a mountain, mountainside, or a plain, which is covered with herbaceous forage crops in grazing season and already grazed, is commonly known as the range. Fallows, even though covered with herbaceous forage crops, are not included in this category.

Log: a portion of the trunk of a fallen tree, almost cylindrical, used to produce types of wood or veneer.

Sawn wood: articles of wood in specific sizes (length, width, and height).

Pole: wood from the trunk of a tree the chest-high

diameter of which is between 8 and 30 centimetres.

Pitprop: rounded piece of wood, almost two metres long, with a median diameter of 6 to 20 centimetres and used in mines.

Timber: round wood 1.5 to 2.0 metres in length and 20-40 centimetres in diameter that cannot be turned into sawn wood.

Pulpwood: wastes of articles of wood in different sizes and lengths.

Mulching: is a practice for covering soil to prevent it from erosion, keep its temperature, and retain its moisture.

Living windbreak: a line of trees, shrubs, or other vegetation planted across the usual wind direction to break the force of the wind and lower its speed, causing the sand and other materials carried by the wind to be deposited behind it in an order of size.

Artificial windbreak: rows of artificial obstacles (like fence, wall, dead branches, etc.) constructed across the usual wind direction to break the force of the wind and lower its speed, causing the sand and other materials carried by the wind to be deposited behind it in an order of size.

Preservation: selection and declaration of the areas of regions with high erosion or sensitive to erosion.

Forest the land which is covered with natural green coverage or planted trees and shrubs and its main economic product is wood. The tree nurseries are not considered as a forest. Plastic bag seedlings and nurseries created for the purpose of forest protection and development of forests are considered as a forest.

Sewage extension: refers to the part of minor sewage pipelines, including pipes and related accessories, with a profile appropriate to siphon or contractual capacity, which carries joint sewages away from the siphon to the private line or to the public network for collecting sewages.

Customer of sewage and water: A customer who has a contract with a sewage and water supplier for a determined time period and his/her needed extension(s) is/are installed.

Water and sewage extension for household use: This kind of extension is installed in the residential

units for conventional consumption of drinking water or disposal of household sewage (a place recognized by the Water and Sewage Company, a residential unit is defined as a place for living which has at least one room, a kitchen, a toilet, and has independent entrance or has an entrance leading to a common hallway).

Public network for collection and transmission of sewage: refers to all installations and equipment, such as main collectors, used for collection and transmission of sewage to water treatment house, and pump houses of urban sewage and public side networks, all belonging to the Water and Sewage Company. The network is not responsible for the collection, transmission, and disposal of rainfall water flowing on passages, flood channels and channels inside and outside cities and located in the customers' estates.

Sewage services: providing the services such as sewage removal and disposal to the public network for collection and transmission of sewage based on water consumption, and capacity and specifications determined and agreed in the contract related to the network installation whether the customer makes use of this capacity or not.

Treatment and removal of sewage: refers to all the operations related to the use of installation and the equipment related to wastewater removal and treatment such as wastewater treatment plants, pumping stations, and different types of chlorination installations, channels, and wastewater transmission lines.

Selected information

In the year 1398, the area of zones protected by the Iran Department of Environment was about 18473493 hectares, of which the Ostans of Kerman with 2409268 hectares and Alborz with 8617 hectares had the highest and lowest areas respectively. In this year a number of 2541 conflagrations happened in the forests and ranges which shows a rise of 93.7 percent in comparison with the previous year.

In the year 1397, among the pollutant and greenhouse gases resulting from the burning of fuels in the transportation sector, CO₂ with 153892123 tons had the greatest portion; namely 92.0% of the total pollutant and greenhouse gases emitted in this sector. It should be cited that the greatest portion of CO₂ production is related to the burning of gasoline and the lowest one goes to the liquefied gas.

In the year 1398, 52 percent of the population of the country was under the coverage of the network for collection and transmission services of urban sewage which shows a one percent rise compared to the previous year. The highest share of the population under the coverage of this network belongs to the Ostan of Kordestan with 96 percent and the lowest share of the population under the coverage of this network is for the Ostan of Kerman with 13 percent.

In the year 1398, the average volume of collected wastewater was 5680317 cu m which shows a 7.9 percent rise compared to the year 1397. The Ostans of Tehran and Khuzestan with 19 percent and 13.4 percent had the most collected wastewater volume and the Ostans of Semnan and South Khorasan with 0.2 percent and 0.3 percent of total nation's wastewater had the lowest volumes, respectively.

2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1398 (hectare)

Ostan	Total		National park		Wildlife habitat	
	Number	Area	Number	Area	Number	Area
Total country.....	296	18473493	32	2068242	50	6355662
East Azarbayejan.....	14	594749	2	15914	1	89014
West zarbayejan.....	7	663324	1	541315	2	5757
Ardebil	4	136979	0	0	0	0
Esfahan.....	15	1607757	4	114128	6	1190172
Alborz	1	8617	0	0	0	0
Ilam	6	137462	0	0	0	0
Bushehr	8	180946	2	68193	1	2082
Tehran	11	470896	3	55151	1	76902
Chaharmahal & Bakhtiari .	8	206527	1	4372	0	0
South Khorasan.....	9	1858302	0	0	3	1578302
Khorasan-e-Razavi.....	28	1039268	1	35460	3	90212
North Khorasan.....	11	194080	3	30542	1	69174
Khuzestan.....	15	707929	2	11594	2	331399
Zanjan	3	244164	0	0	1	29812
Semnan.....	8	2117042	3	550624	2	460508
Sistan & Baluchestan	9	982257	0	0	1	293031
Fars.....	13	1255064	3	255375	1	154484
Qazvin	3	119414	0	0	0	0
Qom.....	1	34177	0	0	0	0
Kordestan	8	261966	0	0	1	3292
Kerman.....	16	2409268	1	149982	4	1435067
Kermanshah	6	166371	0	0	1	41713
Kohgiluyeh& Boyerahmad .	8	208699	1	25839	0	0
Golestan	4	138797	1	90960	0	0
Gilan	15	133444	1	3477	5	4172
Lorestan.....	5	177263	0	0	1	24824
Mazandaran.....	23	630670	2	36982	5	84981
Markazi	5	133625	0	0	2	27916
Hormozgan.....	16	700633	0	0	2	4378
Hamedan	6	62351	0	0	0	0
Yazd	10	891450	1	78334	4	358470

2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1398 (continued) (hectare)

Ostan	Protected zones ⁽¹⁾		National natural heritages	
	Number	Area	Number	Area
Total country	174	10035567	40	41022
East Azarbayejan.....	10	488352	1	1469
West zarbayejan	3	116250	1	2
Ardebil	2	129108	2	7871
Esfahan.....	4	303451	1	6
Alborz.....	1	8617	0	0
Ilam	4	135933	2	1529
Bushehr	3	103389	2	7282
Tehran	4	334348	3	4495
Chaharmahal & Bakhtiari	6	201742	1	413
North Khorasan	6	280000	0	0
Khorasan-e-Razavi	21	903845	3	9751
South Khorasan	4	94280	3	84
Khuzestan.....	10	364891	1	45
Zanjan.....	2	214352	0	0
Semnan.....	3	1105910	0	0
Sistan & Baluchestan	4	688994	4	232
Fars.....	9	845205	0	0
Qazvin	3	119414	0	0
Qom.....	1	34177	0	0
Kordestan	5	258597	2	77
Kerman.....	10	824219	1	//
Kermanshah	3	124641	2	17
Kohgiluyeh & Boyerahmad	7	182860	0	0
Golestan	3	47837	0	0
Gilan.....	5	125534	4	261
LoRESTAN.....	3	152438	1	1
Mazandaran	13	530184	3	5523
Markazi	2	105705	1	4
Hormozgan.....	13	694299	1	1956
Hamedan	6	62351	0	0
Yazd	4	454644	1	2

1. Central Alborz Protected Area is located in three Ostans namely Ostans of Tehran, Alborz, and Mazandaran.

Source: Iran Department of Environment.

2.1. AREA OF ZONS PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT 1398



(1000 HECTARES)



For data see Table 2.1.

2.2. AREA OF FORESTS, RANGES AND DESERTS BY OSTAN, THE YEAR 1398 (hectare)

Ostan	Forests	Ranges				Desert phenomena ⁽¹⁾
		Total	Good (dense)	Fair (semi-dense)	Poor (low dense)	
Total country	14319063	84814991	7181250	21419151	56214590	32576492
East Azarbayejan	143467	2473441	703729	1359707	410005	112370
West zarbayejan.....	100958	2472508	553792	1063376	855340	181103
Ardebil	51665	903896	427906	457642	18349	1337
Esfahan	411847	6328655	280070	403988	5644597	2985827
Alborz	2420	438169	187209	125480	125480	12657
Ilam	634461	1112357	27835	479788	604735	33923
Bushehr	204306	1262995	8777	409208	845010	331682
Tehran	23895	848298	220289	349042	278967	143529
Chaharmahal & Bakhtiari...	335654	908152	182315	390823	335013	118893
South Khorasan.....	712033	6288092	6184	632226	5649682	1129364
Khorasan-e-Razavi	667341	6558356	304530	2147046	4106780	593620
North Khorasan.....	424740	1555206	112615	627244	815348	43279
Khuzestan	938326	2477691	571073	1353096	553522	521341
Zanjan.....	61113	1137060	240442	425301	471317	79931
Semnan	340168	3731083	210807	585093	2935183	5112294
Sistan & Baluchestan	370786	10648499	217096	908129	9523274	4804956
Fars	2218925	7319987	57706	1735276	5527005	669725
Qazvin.....	26871	853485	252550	430122	170813	29151
Qom.....	4149	723019	2498	34830	685691	176383
Kordestan.....	372307	1294397	437855	494212	362330	3354
Kerman	591823	8186300	81323	2214046	5890931	7860548
Kermanshah	528507	1188438	164352	476166	547920	25916
Kohgiluyeh & Boyerahmad..	795786	478812	63966	144418	270428	40427
Golestan	415221	862825	381317	401887	79621	26
Gilan.....	545576	244986	98843	131684	14459	1779
Lorestan.....	1226367	883505	146857	672209	64439	11741
Mazandaran.....	1006518	584711	357671	205068	21973	1086
Markazi	1548	1772951	465804	1140366	166781	73143
Hormozgan....	1053745	4093342	712	210907	3881724	1515013
Hamedan	1441	665767	323505	283977	58285	26372
Yazd	107096	6518007	91623	1126795	5299589	5935725

1. Including salt desert, sand dunes, sand sheets, clay plain, salt lands, lands with no vegetation and exposed bedrock outcrops.

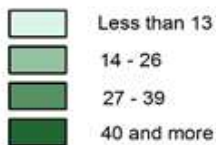
Source: Forests, Range and Watershed Management Organization.

2.2. RATIO OF FORESTS AREA TO THE AREA OF THE TOTAL OSTANS, THE YEAR 1398



For data see tables 2.2. & 1.4.

Percent



2.3. CASES AND AREAS UNDER CONFLAGRATION IN FORESTS AND RANGES

Year	Conflagration (case)			Area under conflagration (ha)		
	Total	Forests	Ranges	Total	Forests	Ranges
1380	801	369	432	7744	3184	4560
1385	1237	611	626	11132	2752	8380
1390.....	1324	447	877	36972	23656	13316
1394.....	2088	887	1201	18480	4716	13764
1395.....	2298	905	1393	21512	8712	12800
1396.....	1780	1179	601	9595	5869	3726
1397.....	1312	814	498	4746	2649	2097
1398.....	2541	1093	1448	20941	5146	15795

Source: Forests, Range and Watershed Management Organization.

2.4. VOLUME OF WOOD PRODUCTS UNDER THE AUSPICES OF GENERAL DEPARTMENTS OF NATURAL RESOURCES OF NORTHERN AREAS

Year	Log (1000 m ³)	Sawn wood and sleepers (1000 m ³)	Poles, pit props and pulpwood (1000 m ³)	Fuel wood (1000 m ³)	Charcoal (1000 tons)
1380	328 .00	87 .00	245 .00	504 .00	6 .00
1385	285 .00	50 .00	209 .00	295 .00	1 .00
1390.....	255 .00	31 .00	230 .00	221 .00	//
1394.....	201 .00	26 .00	166 .00	162 .00	//
1395.....	162 .50	21 .75	138 .00	145 .19	0 .87
1396.....	131 .08	13 .56	133 .63	127 .54	//
1397.....	21 .68	//	18 .89	10.84	0 .00
1398⁽¹⁾	0 .00	0 .00	0 .00	0 .00	0 .00

1. Because of conducting the "Forest Rest" project, no wood product was produced.

Source: Forests, Range and Watershed Management Organization.

2.5. COMBATING DESERTIFICATION AND DUNE STABILIZATION ACTIVITIES

Year and Ostan ⁽¹⁾	Plant nursery (ha)	Plastic bag seedling (1000)	Plantation (ha)	Seeding (ha)
1380	25.0	4290	34556	59610
1385.....	32.0	7349	31056	27724
1390.....	13.0	2569	8212	4748
1394.....	17.0	1467	32134	2148
1395.....	7.2	536	11443	764
1396.....	124.0	40577	48880	642
1397.....	13.6	532	14434	700
1398⁽²⁾	1.7	96	40366	582
East Azarbayejan.....	0.0	0	110	0
West Azarbayejan.	0.0	0	177	0
Esfahan	0.0	0	1675	202
Alborz	0.0	0	110	0
Ilam	0.0	0	2135	0
Bushehr	0.0	0	530	0
Tehran	0.0	0	380	0
South Khorasan.....	0.0	0	6035	0
Khorasan-e-Razavi.....	1.5	0	3800	0
North Khorasan	0.0	0	917	0
Khuzestan	0.0	0	5289	0
Semnan	0.0	0	2755	380
Sistan & Baluchestan	//	33	3380	0
Fars	0.0	0	550	0
Qazvin	0.0	0	0	0
Qom.....	0.0	0	2100	0
Kerman	0.0	10	6212	0
Golestan	0.0	0	1298	0
Markazi.	0.0	3	530	0
Hormozgan	0.0	0	1786	0
Hamadan	0.0	0	52	0
Yazd	0.0	0	545	0

2.5. COMBATING DESERTIFICATION AND DUNE STABILIZATION ACTIVITIES (continued)

Year and Ostan ⁽¹⁾	Seed gathering (ton)	Mulching (ha)	Windbreak (not living) (km)	Windbreak (ha)	Preservation (ha)	Preparation of projects for combating desertification (1000ha)
1380	489	1650	468	0	703937	289
1385.....	230	4452	42	1087	816831	254
1390.....	72	0	23	518	408404	8000
1394.....	77	605	17	336	210602	0
1395.....	29	7	318	808	693816	25
1396.....	37	21416	290	1476	785346	78
1397.....	38	10622	0	465	457218	0
1398⁽²⁾	265	879157	125	3798	879157	38
East Azarbayejan.....	0	31725	4	0	31725	0
West Azarbayejan	0	29140	16	0	29140	0
Esfahan	0	27386	50	420	27386	0
Alborz	0	10749	0	0	10749	0
Ilam	0	3200	0	600	3200	0
Bushehr.	0	6200	0	0	6200	0
Tehran	0	0	0	0	0	0
South Khorasan.....	0	3875	0	549	3875	20
Khorasan-e-Razavi.....	15	464475	20	0	464475	8
North Khorasan.....	0	3100	0	0	3100	0
Khuzestan	0	186000	0	0	186000	0
Semnan	0	3100	0	183	3100	0
Sistan & Baluchestan	0	38750	0	450	38750	0
Fars	0	3100	0	0	3100	0
Qazvin	0	7095	0	0	7095	0
Qom.....	0	6787	0	0	6787	0
Kerman	0	23250	35	1233	23250	0
Golestan	0	1550	0	0	1550	10
Markazi.	250	23500	0	0	23500	0
Hormozgan	0	2800	0	363	2800	0
Hamadan	0	0	0	0	0	0
Yazd	0	3375	0	0	3375	0

1. The Ostans not mentioned here have no activities in this field.

2. 70 hectares of area in Mazandaran was planted in the year 1398.

Source: Forests, Range and Watershed Management Organization.

2.6. MAJOR ACTIVITIES CARRIED OUT ON RANGE MANAGEMENT, BALANCE OF LIVESTOCK MANAGEMENT, AND IMPROVEMENT AND REHABILITATION OF RANGELANDS

Description	Unit	Year							
		1380	1385	1390	1394	1395	1396	1397	1398
<i>Range management and balance of livestock and range management⁽¹⁾</i>									
Cadastral survey, delineation and control of grazing permits.....	1000 ha	2666	3993	2439	283	1113	755	206	735
Preparation of range management plans.....	1000 ha	1009	1531	462	38	16	525	8	30
Range and livestock grazing management in range allotments	1000 ha	11059	59728	25732	4018	4562	4946	1884	1942
<i>Improvement and rehabilitation of rangelands⁽²⁾</i>									
Improvement and rehabilitation of rangelands project	1000 ha	0	136	0	0	0	0	0	0
<i>Rehabilitation and restoration of rangelands⁽²⁾</i>									
Transplanting seedlings.....	1000 ha	17	4	1	2	1	5	3	1
Direct seeding and hoeing....	1000 ha	61	49	19	5	0	0	45	2
Fertilizer spreading on rangelands	1000 ha	17	29	9	2	//	16	9	1
Water harvesting	1000 ha	59	42	43	3	6	6	4	1
Providing water troughs	Set	1581	2105	1181	620	269	806	1186	576
Drilling shallow wells	case	173	90	57	15	6	10	2	4
Installation of wind pumps...	Set	11	18	29	3	4	4	0	0
Seed production.....	Ton	468	390	1840	124	35	30	365	8
Restoration of pastures on degraded marginal lands	1000ha	11	12	4	1	2	2	4	//

1. National plan of "Range management and Balance of Livestock and Range", was renamed "Sustainable Management of National Rangelands" in the year 1384, of which the name of some projects changed accordingly, too.

2. Since the year 1384, the plan of "Improvement and Reformation of Rangelands" has been provincialized and since the year 1386 its projects have been conducted in the form of "Improvement and Rehabilitation of Rangelands".

Source: Forests, Range and Watershed Management Organization.

2.7. AMOUNT OF FERTILIZERS DISTRIBUTED BY TYPE**(ton)**

Year and Ostan	Total	Nitrogenous	Phosphate	Potash	Macro & micro elements
1380.....	2919813	1761637	656242	213176	288758
1385.....	4574238	2511989	1244861	378162	439226
1390.....	1603623	1093827	315146	61900	132750
1394.....	1432288	1148765	212970	70553	0
1395.....	1690288	1438960	131941	119387	0
1396.....	1590614	1125689	344308	120617 ⁽¹⁾	0
1397.....	2132369	1595288	381481	155600	0
1398.....	2229730	1695434	327863	206433	0
East Azarbayejan.....	88387	60444	20722	7221	0
West Azarbayejan	75319	54757	15321	5241	0
Ardebil	68612	51697	13889	3026	0
Esfahan.....	71312	55330	7931	8051	0
Alborz	17158	12813	2456	1889	0
Ilam	43362	34911	5733	2718	0
Bushehr	17631	11627	3105	2899	0
Tehran	40763	31518	6138	3107	0
Chaharmahal & Bakhtiari .	30688	23171	4161	3356	0
South Khorasn.....	17751	12702	2907	2142	0
Khorasan-e-Razavi.....	143416	103091	24666	15659	0
North Khorasn.....	34978	25340	6169	3469	0
Khuzestan.....	314407	251867	37313	25227	0
Zanjan	50434	39280	8722	2432	0
Semnan.....	27446	19970	4446	3030	0
Sistan & Baluchestan	33191	26673	4088	2430	0
Fars.....	178911	146787	23088	9036	0
Qazvin	58655	44677	9973	4005	0
Qom.....	16603	11318	3261	2024	0
Kordestan	70851	53455	12943	4453	0
Kerman ⁽²⁾	103224	74692	14776	13756	0
Kermanshah.....	108044	87134	15773	5137	0
Kohgiluyeh & Boyerahmad	26119	21255	3083	1781	0
Golestan	147739	108286	22919	16534	0
Gilan.....	74439	50498	7104	16837	0
Lorestan.....	76181	61600	11236	3345	0
Mazandaran	114995	86118	9974	18903	0
Markazi	60430	47348	7875	5207	0
Hormozgan.....	17691	11139	2984	3568	0
Hamedan	85142	66195	12364	6583	0
Yazd	15851	9741	2743	3367	0

1. It should be cited that an amount of 15668 tons of potash fertilizers were distributed for storage warehouses which cannot be mentioned in the Ostans' tables.

2. The amount of fertilizer distributed in Jiroft is included in Kerman Ostan

Source: Agricultural Support Services Company.

2.8. PESTICIDES SOLD BY TYPE**(ton)**

Year	Total	Insecticides	Acaricides	Fungicides	Herbicides	Rodenti- cides	Mollusc- ocides	Granule and oil ⁽¹⁾	Others
1380	25578	8663 ⁽²⁾	1134	2813	7211	122	65	5537	33
1385	20894	3917 ⁽²⁾	240	3285	9971	5	0	3394	82
1390	3574	162	30	188	1181	0	0	2004	9
1394	997	57	46	0	45	0	0	830	19
1395	1241	66	178	9	39	0	0	947	2
1396	1801	141	10	0	5	0	0	1645	0
1397	1571	14	0	0	12	0	0	1545	0
1398	277⁽³⁾	107	0	0	12	0	0	158	0

1. Including diazinon granules, padan granules, emulsified oil and regent.

2. Including tablets.

3. The reduction is due to privatization.

Source: Agricultural Support Services Company.

2.9. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM BURNING OF FUELS IN AGRICULTURE SECTOR BY TYPE**(ton)**

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
1385	66602	68185	415	18968	29072	11114290	000	000
1390 ⁽¹⁾	61058	62829	382	14168	26673	12376837	643	4148
1393 ⁽¹⁾	53635	55140	338	12150	23443	12409905	586	3647
1394 ⁽¹⁾	50629	51951	317	11259	22141	12521393	566	3447
1395 ⁽¹⁾	50305	51610	315	11397	21997	13157453	577	3425
1396 ⁽¹⁾	46248	47619	292	10214	20211	12967919	544	3148
1397	50239	51771	318	11038	21953	14526008	598	3420
Motor spirit	2	//	0	50	//	340	//	//
Burning oil	10	47	0	15	0	50585	2	//
Gas oil	50162	51416	314	10973	21946	8833744	495	3410
Fuel oil	66	308	5	//	7	21183	1	//
Natural gas	0	0	0	0	0	5620156	100	10

1. Revised figures.

Source: Ministry of Energy.

2.10. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM BURNING OF FUELS IN MANUFACTURING SECTOR BY TYPE**(ton)**

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
1385	131299	138668	1995	16473	15157	61522460	000	000
1390 ⁽¹⁾	171045	187546	2769	24900	17340	97431899	2102	277
1393 ⁽¹⁾	183806	172457	2527	22371	18675	107210113	2258	291
1394 ⁽¹⁾	165955	107698	1545	17011	16767	100018058	2030	249
1395 ⁽¹⁾	172371	98739	1401	18426	17442	104764985	2109	256
1396 ⁽¹⁾	179655	94109	1322	23410	18185	109900745	2203	266
1397	185569	92365	1286	21952	18871	114048412	2284	275
Motor spirit	574	64	0	14890	55	101215	4	1
Burning oil	65	311	0	101	0	337761	14	3
Gas oil	14375	45137	575	575	4312	8100802	328	66
Fuel oil	9913	46525	711	4	991	3200905	124	25
Liquefied gas	0	//	0	2	0	3857	0	//
Natural gas	160642	328	0	6381	13512	101463357	1809	181
Coke gas	000	000	000	000	000	105027	2	0
Blast furnace gas	000	000	000	000	000	735488	3	0

1. Revised figures.

Source: Ministry of Energy.

**2.11. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM
BURNING OF FUELS IN TRANSPORTATION SECTOR BY TYPE**
(ton)

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
<i>Total transportation sector</i>								
1385	853845	350932	3725	9512573	273446	111500973	0	0
1390 ⁽¹⁾	877376	415104	4629	7794380	311352	127119584	42746	5841
1393 ⁽¹⁾	938677	409938	4431	9034641	324425	137610013	48718	6385
1394 ⁽¹⁾	881766	370024	3943	9202907	293876	132880460	49806	6086
1395 ⁽¹⁾	907030	405813	4461	9736569	295212	139062250	51996	6288
1396 ⁽¹⁾	956277	392839	4154	10428797	311749	144516638	54442	6687
1397	1018770	410578	4311	11512870	325961	153892123	57858	6685
Motor sprit	437536	48615	0	11343525	42133	77105523	36717	3560
Gas oil	535717	333335	3968	142858	261906	55906731	2942	2942
Liquefied gas	000	000	000	000	000	11164	16	1
Natural gas	000	000	000	000	000	16424670	18152	59
Fuel oil	146	683	10	0	15	47016	000	000
Jet fuel (JP ₄)	561	62	0	14538	0	99372	1	3
Jet oil fuel (ATK).	44811	27882	332	11950	21907	4297647	30	120
<i>Road and marine transportation</i>								
1385	813084	326264	3433	9466815	254052	107402790	0	0
1390 ⁽¹⁾	830800	386634	4291	7756310	288974	122496090	42667	5367
1393 ⁽¹⁾	886059	377672	4048	8996824	299064	132396374	48625	5827
1394 ⁽¹⁾	827777	336794	3548	9170258	267761	127553954	49713	5529
1395 ⁽¹⁾	845564	367971	4011	9699925	265472	132997296	51888	5640
1396 ⁽¹⁾	890889	352460	3674	10395935	280074	138083562	54328	6000
1397⁽²⁾	973389	382632	3979	11486125	304053	149495104	57828	6562
Motor sprit	437526	48614	0	11343267	42132	77105523	36717	3560
Gas oil	535717	333335	3968	142858	261906	55906731	2942	2942
Liquefied gas	000	000	000	000	000	11164	16	1
Natural gas	000	000	000	000	000	16424670	18152	59
Fuel oil	146	683	10	0	15	47016	000	000

**2.11. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM
BURNING OF FUELS IN TRANSPORTATION SECTOR BY TYPE (continued) (ton)**

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
<i>Railway transportation</i>								
1385	8200	5102	61	2192	4009	804228	0	0
1390	9234	5746	68	2462	4515	963676	54	372
1393	11043	6871	82	2945	5399	1152433	65	445
1394	10908	6787	81	2909	5333	1138345	64	439
1395	12788	7957	95	3410	6252	1334546	75	515
1396	13580	8450	101	3621	6639	1417234	79	547
1397⁽²⁾	000	000	000	000	000	000	000	000
Gas oil.....	000	000	000	000	000	000	000	000
<i>Air transportation</i>								
1385	32561	19565	231	43565	15385	3293955	0	0
1390	37341	22724	269	35607	17863	3659817	26	102
1393	41575	25395	301	34872	19962	4061206	28	114
1394	43081	26442	314	29739	20783	4188161	29	117
1395	48677	29885	355	33234	23488	4730408	33	132
1396	51808	31929	379	29241	25035	5015843	35	140
1397	45381	27946	332	26746	21908	4397019	31	123
Jet fuel (JP ₄).....	561	62	0	14538	0	99372	1	3
Jet oil fuel (ATK)	44811	27882	332	11950	21907	4297647	30	120
Motor spirit	10	1	0	258	1	000	000	000

1. Revised figures.

2. The information for the year 1397 includes the amounts related to railway, air and road transportations.

Source: Ministry of Energy.

2.12. EMISSION OF POLLUTANTS AND GREENHOUSE GASES RESULTED FROM BURNING OF FUELS IN HOUSEHOLDS, TRADE, AND PUBLIC SECTOR BY TYPE (ton)

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
1385	121164	87244	956	71176	12576	125869250	000	000
1390 ⁽¹⁾	115886	52953	583	47103	11286	136859996	3837	492
1393 ⁽¹⁾	115289	37170	392	48079	11194	137220803	4166	523
1394 ⁽¹⁾	116817	30116	296	47026	11371	127922931	4170	518
1395 ⁽¹⁾	125916	29764	291	51406	12296	148849653	4338	534
1396 ⁽¹⁾	118776	26641	261	48869	11606	140532545	4159	510
1397	129115	24948	250	52839	12635	150632787	4312	521
Motor spirit	825	92	0	21377	79	145309	6	1
Burning oil	1108	5316	0	1728	0	5768195	241	48
Gas oil	5123	16086	205	205	1025	2886969	117	23
Fuel oil	627	2945	45	0	63	202584	8	2
Liquefied gas	1343	29	0	13437	0	6168672	98	10
Natural gas	120089	480	0	16092	11469	129854667	2315	231
Animal waste	000	000	000	000	000	144538	43	6
Bush and thorn	000	000	000	000	000	1004201	301	40
Firewood	000	000	000	000	000	4415875	1183	158
Charcoal	000	000	000	000	000	976	0	//
Coal	000	000	000	000	000	40801	0	2

1. Revised figures.

Source: Ministry of Energy.

2.13. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM BURNING OF FUELS IN REFINERY SECTOR BY TYPE (ton)

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
1385	000	000	000	000	000	000	000	000
1390	000	000	000	000	000	12227299	263	34
1393	000	000	000	000	000	15574965	322	40
1394	000	000	000	000	000	15049435	302	36
1395	000	000	000	000	000	15297163	322	40
1396	000	000	000	000	000	15965245	313	35
1397	000	000	000	000	000	17267316	325	35
Gas oil	000	000	000	000	000	226178	9	2
Fuel oil	000	000	000	000	000	313521	12	2
Natural gas	000	000	000	000	000	12147759	217	22
Refinery gas	000	000	000	000	000	4029165	79	8
Liquefied gas	000	000	000	000	000	550692	9	1

Source: Ministry of Energy.

2.14. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM BURNING OF FUELS IN POWER PLANTS AFFILIATED TO THE MINISTRY OF ENERGY, PRIVATE SECTOR, AND LARGE INDUSTRIES BY TYPE (ton)

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
1385	172332	192733	2943	222	20728	110207121	0	0
1390	634884	709408	5130	148500	30724	165184877	4087	666
1393	651610	627934	4586	177660	31105	177744913	4243	654
1394	627724	437381	4158	162624	30330	174010543	4201	630
1395	641280	295919	2481	160434	25154	171686989	3622	485
1396	651833	239623	2044	156100	25159	182746913	3701	471
1397	672622	239911	2259	151021	25563	184880721	3722	483
Ministry of Energy								
Gas oil.....	18836	10432	308	620	1278	3908941	146	29
Natural gas.....	211840	0	0	79144	6144	55754272	987	99
Fuel oil.....	25403	152285	711	48832	2974	11550076	372	74
Private sector								
Gas oil.....	98358	43266	1124	1464	4666	14090575	534	107
Natural gas.....	299879	0	2	18872	9646	91226157	1549	155
Fuel oil.....	5044	33906	114	20	477	1912013	60	12
large industries								
Gas oil.....	9	21	0	2	2	3786	0	//
Natural gas.....	13252	0	0	2066	376	3706044	60	6
Coke gas ⁽¹⁾	000	000	000	000	000	86992	2	0
Blast furnace gas ⁽¹⁾	000	000	000	000	000	2641866	10	1

1. Used as part of fuel in the Esfahan Steel Company.

Source: Ministry of Energy.

**2.15.EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM
BURNING OF FUELS IN POWER PLANTS AFFILIATED TO THE MINISTRY OF
ENERGY, PRIVATE SECTOR, AND LARGE INDUSTRIES BY TYPE OF POWER
PLANT AND POLLUTANT, THE YEAR 1397**

								(ton)
Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
Total	672622	239911	2259	151021	25563	184880721	3722	483
Ministry of Energy								
Thermal plant.....	146671	152803	719	124395	6260	40728935	898	127
Gas power plant.....	44892	5289	165	1730	2269	17258946	333	41
Combined cycle	64394	4257	129	2472	1845	13159150	272	33
Diesel power plant	122	369	6	0	23	66258	3	1
Private sector								
Thermal plant.....	48432	34242	122	12233	2035	16485907	309	37
Gas power plant.....	64407	17351	376	2721	4706	35281155	684	86
Combined cycle	290442	25579	742	5401	8047	55461682	1151	150
large industries.....	13261	21	0	2069	378	6438688	73	7

Source: Ministry of Energy.

2.16. COVERAGE OF URBAN SEWAGE EXTENSION

Ostan	Year					
	1390		1394		1395	
	Cities under coverage of fresh water installation	Cities with sewage extension	Cities under coverage of fresh water installation	Cities with sewage extension	Cities under coverage of fresh water installation	Cities with sewage extension
Total country	1055	257⁽¹⁾	1144	281⁽¹⁾	1154	290⁽¹⁾
East Azarbayejan	57	12	58	12	60	12
West Azarbayejan.....	38	10	38	11	38	11
Ardebil	23	7	26	8	26	9
Esfahan	97	27	104	31	104	31
Alborz	17	4	19	7	19	10
Ilam.....	19	4	19	4	19	5
Bushehr.....	16	3	33	3	33	3
Tehran	41	7	41	8	41	8
Chaharmahal & Bakhtiari.....	26	7	38	8	39	9
South Khorasan.....	19	1	21	1	24	1
Khorasan-e-Razavi	71	5	74	8	74	8
North Khorasan.....	18	2	21	2	21	2
Khuzestan	63	18	62	17	62	17
Zanjan.....	18	2	21	3	21	4
Semnan	17	5	19	6	19	6
Sistan & Baluchestan.....	36	2	37	4	37	4
Fars	79	6	81	8	83	8
Qazvin	26	9 ⁽¹⁾	26	9 ⁽¹⁾	26	9 ⁽¹⁾
Qom	2	1	6	1	6	1
Kordestan.....	23	19	24	18	24	18
Kerman	63	2	69	2	69	2
Kermanshah	27	27	28	28	28	27
Kohgiluyeh & Boyerahmad.....	12	2	15	3	15	3
Golestan.....	21	4	22	4	22	4
Gilan	48	33	50	34	50	35
Lorestan	23	7	24	7	24	7
Mazandaran.....	46	7	54	7	57	7
Markazi.....	29	7	33	8	32	8
Hormozgan	33	4	36	6	36	6
Hamedan.....	29	11	29	11	29	12
Yazd	18	2	16	2	16	3

2.16. COVERAGE OF URBAN WASTEWATER EXTENSION (continued)

Ostan	Year					
	1396		1397		1398	
	Cities under coverage of fresh water installation	Cities with sewage extension	Cities under coverage of fresh water installation	Cities with sewage extension	Cities under coverage of fresh water installation	Cities with sewage extension
Total country.....	1167	311⁽¹⁾	1172	325⁽¹⁾	1184	331
East Azarbayejan.....	61	14	62	14	62	14
West Azarbayejan.....	38	11	38	11	39	12
Ardebil	26	9	26	9	26	9
Esfahan	104	34	104	38	104	38
Alborz.....	19	10	19	10	19	10
Ilam.....	19	5	19	6	19	6
Bushehr.....	32	3	32	3	35	3
Tehran	45	18	46	18	46	18
Chaharmahal & Bakhtiyari.....	39	12	39	14	39	14
South Khorasan	24	1	25	1	25	1
Khorasan-e-Razavi	74	8	74	8	76	8
North Khorasan	21	3	21	3	22	4
Khuzestan	62	17	59	17	59	17
Zanjan.....	21	4	21	5	21	5
Semnan	19	6	19	6	19	6
Sistan & Baluchestan.....	37	4	37	4	37	4
Fars	82	8	83	8	84	9
Qazvin	26	9 ⁽¹⁾	26	9 ⁽¹⁾	26	9
Qom	6	1	6	1	6	2
Kordestan.....	27	18	27	21	27	23
Kerman	71	3	71	4	71	4
Kermanshah	28	26	31	28	31	28
Kohgiluyeh & Boyerahmad.....	16	3	16	3	16	3
Golestan.....	22	4	22	4	22	4
Gilan	50	36	50	36	50	36
Lorestan.....	24	7	24	7	25	7
Mazandaran	58	8	58	8	58	8
Markazi.....	33	8	33	8	33	8
Hormozgan	36	6	36	6	36	6
Hamedan.....	29	12	30	12	30	12
Yazd	18	3	18	3	21	3

1. Revised figures.

Source: National Water and Wastewater Engineering Company.

2.17. NUMBER OF WASTEWATER-TREATMENT PLANTS

Ostan	Year						
	1385	1390	1394	1395	1396	1397	1398
Total country.....	90	137	164	182	203	223	237
East Azarbayejan	5	7	9	10	11	11	11
West Azarbayejan.....	4	7	8	9	10	12	14
Ardebil	3	3	3	4	4	6	6
Esfahan	16	21	24	25	27	27	32
Alborz	000 ⁽¹⁾	1	1	4	4	4	2
Ilam.....	3	4	4	5	5	6	6
Bushehr.....	2	3	3	3	3	3	3
Tehran	9 ⁽¹⁾	10	13	14	23	23	25
Chaharmahal & Bakhtiari.....	4	5	5	6	6	6	9
South Khorasan.....	1	1	1	1	1	1	2
Khorasan-e-Razavi	5	7	10	12	13	12	10
North Khorasan.....	1	2	2	2	2	4	6
Khuzestan	4	6	7	8	8	10	10
Zanjan	2	2	2	3	3	4	5
Semnan	2	3	3	5	5	5	3
Sistan & Baluchestan.....	1	2	2	2	3	3	2
Fars	2	2	4	4	4	6	7
Qazvin	3	4	4	6	6	6	5
Qom	1	2	3	3	3	3	2
Kordestan.....	1	3	5	5	6	6	8
Kerman	1	1	1	1	3	3	3
Kermanshah	5	7	7	7	7	8	9
Kohgiluyeh & Boyerahmad.....	1	1	2	3	3	5	6
Golestan.....	2	3	4	4	4	4	4
Gilan	1	2	4	4	4	4	4
Lorestan	2	4	4	4	4	6	6
Mazandaran.....	2	6	6	6	6	6	6
Markazi.....	4	9	11	11	11	12	12
Hormozgan	1	5	4	4	6	7	7
Hamedan.....	1	3	5	5	6	8	8
Yazd.....	1	1	3	2	2	2	4

1. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company.

2.18. CUSTOMERS OF URBAN SEWAGE

Ostan	Year					
	1390		1394		1395	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country	4247278	3896159	6109084	5526748	6491495	5863674
East Azarbayejan	393974	364045	558518	504681	610224	546310
West Azarbayejan	252191	238837	326858	310424	347996	330563
Ardebil	75527	70010	129310	119375	140493	128204
Esfahan	507722	461324	611934	550526	635946	571401
Alborz	24029	21211	81810	75307	93370	87475
Ilam	41812	38854	56308	51378	59690	54475
Bushehr	24602	24050	34092	32970	37306	35911
Tehran	325535	305403	869620	785728	937564	851533
Chaharmahal & Bakhtiari	87155	81002	111713	103467	125196	113171
South Khorasan	27448	25866	43923	40766	47209	43723
Khorasan-e-Razavi	342256	285455	487169	398294	520606	430267
North Khorasan	33859	30227	49892	44682	51879	45617
Khuzestan	437089	391809	499826	448522	512951	460316
Zanjan	27402	25794	36299	34382	43068	40905
Semnan	26635	25582	45458	43624	51482	49105
Sistan & Baluchestan	33620	32867	50995	50117	51201	48754
Fars	173651	159830	217872	206833	232256	220127
Qazvin	103000	99541	159807	134469	169501	143341
Qom	34777	34196	67426	65044	78731	76004
Kordestan	218782	206899	291545	265696	302879	276111
Kerman	8238	7483	25207	22938	28780	26227
Kermanshah	293663	269395	330305	301155	333713	304079
Kohgiluyeh & Boyerahmad	15278	14475	28290	26456	34267	31555
Golestan	13460	12499	28107	25800	29996	27443
Gilan	219845	189115	257440	219074	262805	223533
Lorestan	141375	132592	201902	187665	213191	191169
Mazandaran	13040	12728	34633	33573	38321	37043
Markazi	114731	107539	146598	135099	159015	146528
Hormozgan	53388	48763	71391	62520	74554	64965
Hamedan	157244	154435	220277	213983	230677	223827
Yazd	25950	24333	34559	32200	36628	33992

2.18. CUSTOMERS OF URBAN SEWAGE (continued)

Ostan	Year					
	1396		1397		1398	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country	7166860	6528634	7601152	6935823	7927218	7219220
East Azarbayejan.....	672459	600836	722407	645976	765701	682829
West Azarbayejan	360751	342574	371659	352867	384837	365404
Ardebil	151045	139074	161610	147964	174441	158305
Esfahan	660696	591713	686772	614556	709892	633807
Alborz.....	102134	93623	116262	108969	123625	116258
Ilam	64347	58464	73209	66125	82128	76500
Bushehr	65245	60851	70791	65817	72967	67775
Tehran	974037	885054	1008299	930710	1025403	937729
Chaharmahal & Bakhtiyari	131691	118930	140418	126913	146955	132984
South Khorasan	51175	47338	56600	52455	59873	55618
Khorasan-e-Razavi	813870	752907	891625	825028	947878	875849
North Khorasan	54993	48391	56765	49995	67608	60008
Khuzestan	528087	473574	542563	486029	553733	494573
Zanjan.....	50302	47913	66204	62365	71249	66852
Semnan.....	56960	54308	59724	56643	62302	59182
Sistan & Baluchestan	54376	51727	56893	54173	62132	59112
Fars	251717	237895	268772	253582	287719	269974
Qazvin	174814	148041	183859	156685	194421	180741
Qom	87898	85518	103097	100373	116977	113728
Kordestan	333704	305060	352552	322283	367226	333777
Kerman	32233	29655	35551	32788	39905	36940
Kermanshah	340649	309038	353217	320475	363579	328362
Kohgiluyeh & Boyerahmad	40952	37434	51480	47023	56368	51469
Golestan	32067	29154	33345	30173	34430	30935
Gilan.....	271766	230341	279544	235640	286965	238828
Lorestan.....	223345	200623	245190	217313	249924	218193
Mazandaran	43919	40787	47342	44403	49485	46255
Markazi	166613	153897	171734	158001	180527	165781
Hormozgan.....	78435	68252	80811	70010	82260	71075
Hamedan	242702	234613	253833	244986	263697	253015
Yazd	53878	51049	59024	55503	43011 ⁽¹⁾	37362 ⁽¹⁾

1. This reduction is due to the number of branches for the city of Ardekan in Yazd Ostan.

Source: National Water and Wastewater Engineering Company.

2.19. POPULATION UNDER COVERAGE OF COLLECTION AND REMOVAL SERVICES OF URBAN SEWAGE (percent)

Ostan	Year						
	1385	1390	1394	1395	1396	1397	1398
Total country	27	37	44	47	49	51	52
East Azarbayejan.....	39	54	57	60	64	66	68
West Azarbayejan	41	56	62	63	64	65	67
Ardebil	27	41	47	49	51	53	55
Esfahan	43	58	69	64	66	67	67
Alborz.....	000 ⁽¹⁾	11	24	28	31	31	35
Ilam	29	38	49	49	51	54	57
Bushehr	19	23	24	25	27	23	30
Tehran	18 ⁽¹⁾	24	37	42	45	47	49
Chaharmahal & Bakhtiari	43	54	54	53	55	61	65
South Khorasan	21	28	30	30	37	33	33
Khorasan-e-Razavi.....	15	36	49	53	55	59	61
North Khorasan	21	28	32	34	31	32	38
Khuzestan	47	53	57	61	61	62	62
Zanjan.....	8	18	27	31	34	37	40
Semnan.....	11	14	21	23	24	28	31
Sistan & Baluchestan	8	12	18	19	23	24	24
Fars	11	24	29	35	39	40	44
Qazvin ⁽²⁾	41	55	66	62	63	71	66
Qom	14	20	33	34	30	34	38
Kordestan	75	97	92	92	95	96	96
Kerman	3	5	10	11	11	13	13
Kermanshah	52	64	86	86	87	87	87
Kohgiluyeh & Boyerahmad	13	18	20	28	31	36	47
Golestan	6	10	15	16	16	16	17
Gilan.....	54	62	67	68	70	70	71
Lorestan.....	40	54	58	58	57	67	67
Mazandaran.....	3	6	13	11	12	16	17
Markazi	36	52	61	62	64	67	70
Hormozgan ⁽²⁾	28	34	48	51	56	58	52
Hamedan	44	60	67	71	72	74	75
Yazd ⁽³⁾	7	12	21	23	39	40	39

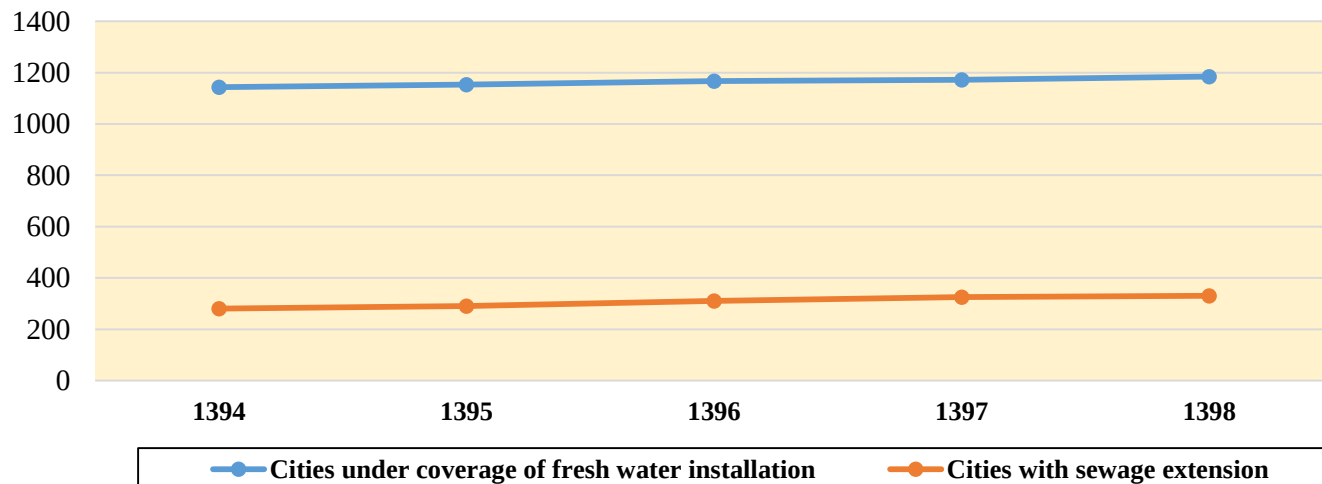
1. The statistics for Alborz are included with Tehran.

2. Revised figures.

3. This reduction is due to the number of branches for the city of Ardekan in Yazd Ostan.

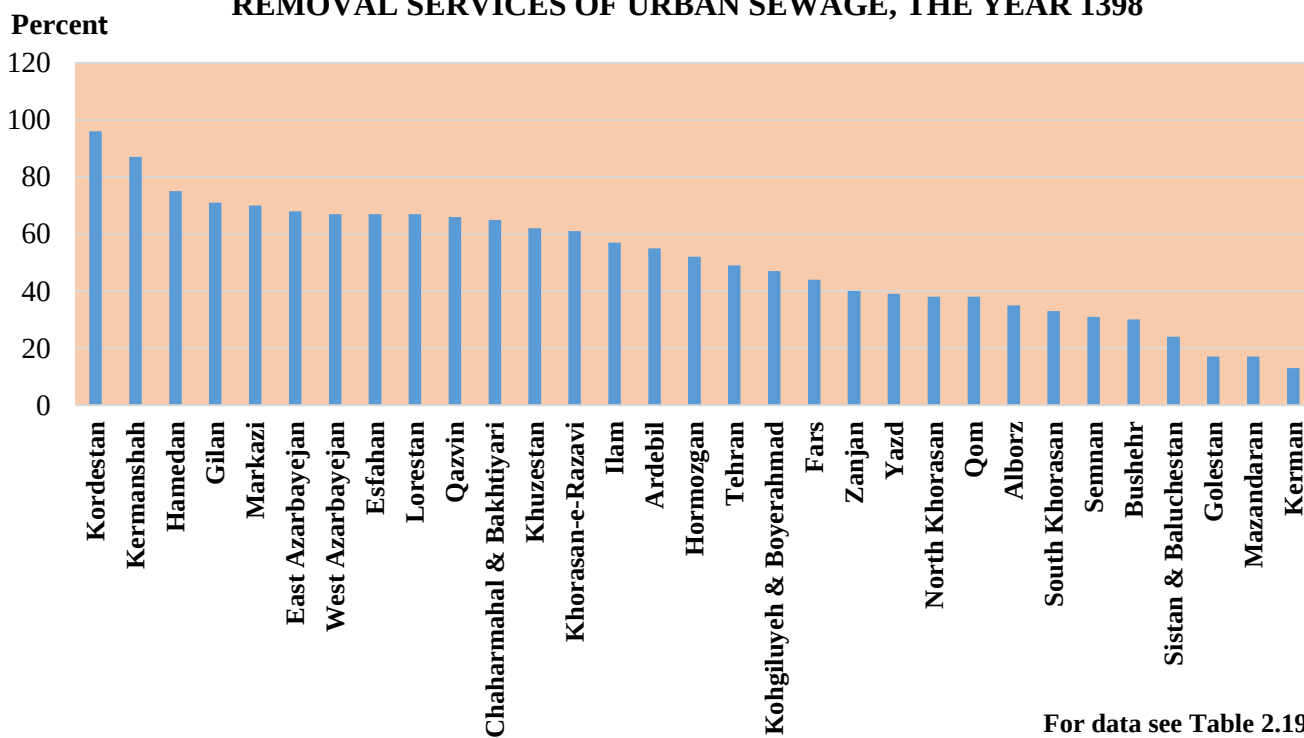
Source: National Water and Wastewater Engineering Company.

2.3. CITIES WITH DRINKING WATER INSTALATIONS AND WASTEWATER EXTENTION



For data see Table 2.16.

2.4 . POPULATION UNDER COVERAGE OF COLLECTION AND REMOVAL SERVICES OF URBAN SEWAGE, THE YEAR 1398



For data see Table 2.19.

2.20. AVERAGE VOLUME OF COLLECTED SEWAGE**(cum/day)**

Ostan	Year						
	1385	1390	1394	1395	1396	1397	1398
Total country	1938898	2863322	4242400	4401032	4891631	5264706⁽¹⁾	5680317
East Azarbayejan	88428	207648	283262	274707	324332	336444	373880
West Azarbayejan.....	121300	182430	231530	243865	254373	257486	271293
Ardebil	28640	47124	95612	97418	76031	72158	79035
Esfahan	390450	446526	474923	482765	453791	475621	488087
Alborz	000 ⁽²⁾	26897	89443	113241	128918	136717	152885
Ilam.....	13400	21460	28012	29848	33857	33938	39790
Bushehr.....	17850	35262	41820	44747	49457	59080	49013
Tehran	495872 ⁽²⁾	567088	659753	801166	802295	1280781 ⁽¹⁾	1078377
Chaharmahal & Bakhtiari	40256	45210	52732	55256	58382	57566	64197
South Khorasan.....	4060	8024	13119	12895	15016	16522	17857
Khorasan-e-Razavi	101370	159200	221531	227268	281454	306287	289766
North Khorasan.....	10890	15200	17741	18827	19163	19512	22394
Khuzestan	102090	130700	768789	579329	810433	554873	758777
Zanjan	3100	14230	30340	31858	31527	38982	33750
Semnan	900	6420	10274	10905	11072	11986	12444
Sistan & Baluchestan.....	8620	13150	17269	17591	16727	18707	29823
Fars	34112	129760	154392	165658	178147	195671	324639
Qazvin	22360	75240	52954	97099	101141	104251	107471
Qom	15620	53248	69339	63022	63884	66084	67315
Kordestan.....	51260	75246	179008	192380	196412	206955	220195
Kerman	1850	7122	16983	17918	22331	25315	31745
Kermanshah	126854	163580	261228	234976	223230	260441	270957
Kohgiluyeh & Boyerahmad ..	1230	2841	13388	20822	23080	23652	23680
Golestan.....	984	8500	21812	24171	26646	30719	38601
Gilan	81254	120461	179343	176189	191066	194320	202049
Lorestan	61258	88546	10558	85471	159362	124096	231137
Mazandaran.....	5200	14200	33840	48041	44144	53135	56913
Markazi.....	34560	72121	92699	98914	115137	123488	129357
Hormozgan	20150	40293	55407	54616	71071	71041	95185
Hamedan.....	49560	76541	49274	60791	87743	91867	99149
Yazd.....	5420	9054	16025	19278	21409	17011	20557

1. Revised figures.

2. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company.

2.21. LENGTH OF NETWORK FOR COLLECTION AND TRANSMISSION LINES OF SEWAGE (km)

Ostan	Year					
	1390		1394		1395	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country.....	42391	2390	53334	2776	55626	2982
East Azarbayejan	2420	22	3096	60	3261	60
West Azarbayejan.....	2278	58	2709	66	2823	70
Ardebil	933	32	1125	44	1163	44
Esfahan	5941	363	7231	407	7461	414
Alborz	508	26	815	30	858	34
Ilam.....	683	15	806	24	835	24
Bushehr.....	455	48	492	48	510	48
Tehran	4671	80	6928	153	7186	268
Chaharmahal & Bakhtiari	886	73	1070	85	1102	88
South Khorasan.....	308	20	452	22	463	22
Khorasan-e-Razavi	2830	290	3434	289	3995	309
North Khorasan.....	274	18	374	26	395	26
Khuzestan	3798	435	5376	625	5452	639
Zanjan	363	10	435	14	452	14
Semnan	303	18	462	27	460	27
Sistan & Baluchestan.....	459	16	654	30	666	30
Fars	2043	181	2322	212	2458	223
Qazvin	1028	49	1230	49	1263	53
Qom	672	8	841	15	878	15
Kordestan.....	1453	122	1600	134	1729	147
Kerman	351	11	520	11	551	12
Kermanshah	2645	232	2704	110	2718	112
Kohgiluyeh & Boyerahmad...	235	30	285	21	292	21
Golestan.....	484	23	551	26	553	27
Gilan	644	45	687	53	691	53
Lorestan	1179	31	1430	35	1474	35
Mazandaran.....	593	18	825	20	868	20
Markazi.....	1345	31	1552	31	1608	32
Hormozgan	750	16	849	26	864	28
Hamedan.....	1233	49	1351	59	1379	59
Yazd.....	626	20	1129	23	1218	28

2.21. LENGTH OF NETWORK FOR COLLECTION AND TRANSMISSION LINES OF SEWAGE (continued) (km)

Ostan	Year					
	1396		1397		1398	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country	59311	3145	62156	3331	64506	3407
East Azarbayejan.....	3469	86	3617	88	3768	88
West Azarbayejan	2969	77	3087	84	3166	85
Ardebil	1196	45	1293	48	1390	51
Esfahan	7840	430	8152	439	8393	471
Alborz.....	918	34	986	36	1046	40
Ilam	895	24	953	25	1054	26
Bushehr	533	48	553	54	580	59
Tehran	8324	314	8365	320	8574	358
Chaharmahal & Bakhtiari	1193	92	1238	94	1274	98
South Khorasan	510	24	532	31	549	31
Khorasan-e-Razavi.....	4376	313	4592	316	4664	220 ⁽¹⁾
North Khorasan	450	28	480	28	514	26 ⁽¹⁾
Khuzestan	5530	649	6025	756	6101	809
Zanjan.....	468	15	501	16	523	16
Semnan.....	506	27	534	28	540	28
Sistan & Baluchestan	679	30	703	30	722	30
Fars	2697	243	3005	257	3179	262
Qazvin	1281	57	1321	60	1338	65
Qom	960	15	972	15	1003	16
Kordestan	1751	148	1776	150	2145	160
Kerman	625	16	768	22	912	26
Kermanshah	2735	114	2811	115	2887	118
Kohgiluyeh & Boyerahmad ...	341	21	431	21	492	21
Golestan	564	27	569	24	584	27
Gilan.....	669	56	735	57	756	59
Lorestan.....	1566	35	1623	35	1752	35
Mazandaran.....	881	21	927	23	960	23
Markazi	1673	39	1697	39	1707	39
Hormozgan.....	897	29	951	31	970	31
Hamedan	1452	59	1526	60	1493 ⁽¹⁾	60
Yazd	1363	29	1429	29	1468	29

1. Reduction is due to adjusting the figures with GIS system.

Source: National Water and Wastewater Engineering Company.

2.22. NUMBER OF SEWAGE TREATMENT PLANTS IN INDUSTRIAL TOWNS AND REGIONS BY OSTAN

Year and Ostan	In operation ⁽¹⁾	Under construction	Under designing
1385	45	27	36
1390	129	33	40
1394	187	21	47
1395	193	19	49
1396 ⁽²⁾	188	15	45
1397 ⁽²⁾	182	17	28
1398	189	12	30
East Azarbayejan	10	0	4
West Azarbayejan.....	7	2	2
Ardebil	4	0	1
Esfahan	14	1	3
Alborz.....	3	0	0
Ilam.....	2	0	0
Bushehr.....	1	0	0
Tehran	8	1	3
Chaharmahal & Bakhtiari.....	4	0	0
South Khorasan.....	2	0	0
Khorasan-e-Razavi	8	0	1
North Khorasan.....	4	0	0
Khuzestan	10	0	2
Zanjan.....	5	0	1
Semnan	5	0	0
Sistan & Baluchestan.....	5	0	0
Fars	9	0	0
Qazvin	3	0	2
Qom	2	1	0
Kordestan.....	4	0	0
Kerman	8	0	0
Kermanshah	6	1	0
Kohgiluyeh & Boyerahmad.....	1	0	0
Golestan.....	11	0	0
Gilan	9	3	2
Lorestan	3	2	0
Mazandaran	14	1	3
Markazi.....	10	0	1
Hormozgan	3	0	0
Hamedan.....	9	0	2
Yazd	5	0	3

1. Statistics in the tables for different years are cumulative.

2. The decrease in the number of sewage treatment plants in industrial towns and regions is due to some operated treatment plants that were under construction in previous years, but are in operation now.

Source: Ministry of Industry, Mine and Trade.

2.23. AREA OF LANDSCAPE IN INDUSTRIAL TOWNS AND REGION BY OSTAN ⁽¹⁾ (ha)

Year and Ostan	Area of landscape
1385	616
1390	5441
1394	7337
1395	7505
1396	7760
1397	7920
1398	8074
East Azarbayejan	331
West Azarbayejan	142
Ardebil	228
Esfahan	673
Alborz	130
Ilam	49
Bushehr	91
Tehran	860
Chaharmahal & Bakhtiari	278
South Khorasan	74
Khorasan-e-Razavi	900
North Khorasan	47
Khuzestan	232
Zanjan	168
Semnan	557
Sistan & Baluchestan	307
Fars	543
Qazvin	188
Qom	336
Kordestan	53
Kerman	426
Kermanshah	233
Kohgiluyeh & Boyerahmad	86
Golestan	142
Gilan	175
Lorestan	36
Mazandaran	155
Markazi	295
Hormozgan	49
Hamedan	93
Yazd	197

1. Statistics in the tables for different years are cumulative.

Source: Ministry of Industry, Mine and Trade.

