

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, monocropping, 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 diametre of which is between 8 and 30 centimetres.

Pitprop: rounded piece of wood, almost two metres long, with a median diametre 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 diametre 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 1397, the area of zones protected by the Iran Department of Environment was about 17764531 hectares, of which the Ostans of Kerman with 2405944 hectares and Qom with 34177 hectares had the highest and lowest areas respectively. In this year a number of 1312 conflagrations happened in the forests and ranges which shows a decrease of 26.3 percent in comparison with the previous year.

In the year 1396, among the pollutant and greenhouse gases resulting from the burning of fuels in the transportation sector, CO₂ with 144705234 tons had the greatest portion; namely 92.2% 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 1397, about 51 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 2 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 1397, the average volume of collected wastewater was 6039958 cu m which shows a 23.5 percent rise compared to the year 1396. The Ostans of Tehran and Khuzestan with 34 percent and 9.2 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 1397 (hectare)

Ostan	Total		National park		Wildlife habitat	
	Number	Area	Number	Area	Number	Area
Total country.....	284	17764531	31	2063916	46	5867133
East Azarbayejan.....	14	594749	2	15914	1	89014
West zarbayejan.....	7	663324	1	541315	2	5757
Ardebil	4	136979	0	0	0	0
Esfahan.....	13	1272682	3	109720	5	863172
Alborz	1	72169	0	0	0	0
Ilam	6	153359	0	0	0	0
Bushehr	7	155307	2	68193	1	2082
Tehran	10	432642	3	55151	0	0
Chaharmahal & bakhtiyari ..	8	206527	1	4372	0	0
South Khorasan.....	7	1873934	0	0	3	1602334
Khorasan-e-Razavi.....	28	1052313	1	35542	3	98777
North Khorasan.....	11	194080	3	30542	1	69174
Khuzestan.....	15	687031	2	11594	2	331399
Zanjan	3	244164	0	0	1	29812
Semnan.....	8	2117191	3	550624	2	453458
Sistan & Baluchestan	9	886020	0	0	1	293031
Fars.....	12	1236229	3	255375	1	153721
Qazvin	3	119414	0	0	0	0
Qom.....	1	34177	0	0	0	0
Kordestan	5	191959	0	0	1	3292
Kerman.....	16	2405944	1	149982	4	1431743
Kermanshah	6	166371	0	0	1	41713
Kohgiluyeh& Boyerahmad .	8	208699	1	25839	0	0
Golestan	4	138797	1	90960	0	0
Gilan	15	132608	1	3477	5	4172
Lorestan.....	5	177263	0	0	1	24824
Mazandaran.....	23	528625	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	8	785363	1	78334	2	252383

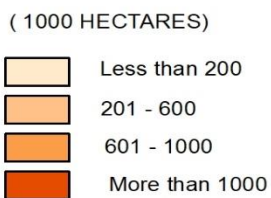
2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1397 (continued) (hectare)

Ostan	Protected zones ⁽¹⁾		National natural heritages	
	Number	Area	Number	Area
Total country	169	9792537	38	40945
East Azarbayejan.....	10	488352	1	1469
West zarbayejan	3	116250	1	2
Ardebil	2	129108	2	7871
Esfahan	4	299784	1	6
Alborz.....	1	72169	0	0
Ilam	4	151830	2	1529
Bushehr	2	77750	2	7282
Tehran	4	372996	3	4495
Chaharmahal & bakhtiyari	6	201742	1	413
North Khorasan.....	4	271600	0	0
Khorasan-e-Razavi	21	908243	3	9751
South Khorasan	4	94280	3	85
Khuzestan	10	343993	1	45
Zanjan	2	214352	0	0
Semnan	3	1113109	0	0
Sistan & Baluchestan	4	592757	4	232
Fars.....	8	827133	0	0
Qazvin	3	119414	0	0
Qom	1	34177	0	0
Kordestan	4	188667	0	0
Kerman.....	10	824219	0	0
Kermanshah	3	124641	2	17
Kohgiluyeh & Boyerahmad	7	182860	0	0
Golestan	3	47837	0	0
Gilan	5	124698	4	261
Lorestan	3	152438	1	1
Mazandaran	13	401139	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 1397



For Data See Table 2.1.

2.2. AREA OF FORESTS, RANGES AND DESERTS BY OSTAN, THE YEAR 1397 (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 zarbajejan.....	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 & bakhtiyari....	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 1397



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	7744.0	3184.0	4560
1385	1237	611	626	11132.0	2752.0	8380
1390.....	1324	447	877	36972.0	23656.0	13316
1393.....	2016	1134	882	18828.0	6789.0	12039
1394.....	2088	887	1201	18480.0	4716.0	13764
1395.....	2298	905	1393	21512.0	8712.0	12800
1396.....	1780	1179	601	9595.0	5869.0	3726
1397.....	1312	814	498	4745.8	2648.8	2097

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 .000	245 .00	504 .00	6 .00
1385	285 .00	50 .000	209 .00	295 .00	1 .00
1390.....	255 .00	31 .000	230 .00	221 .00	//
1393.....	256 .00	31 .000	205 .00	191 .00	//
1394.....	201 .00	26 .000	166 .00	162 .00	//
1395.....	162 .50	21 .750	138 .00	145 .19	0 .87
1396.....	131 .08	13 .560	133 .63	127 .54	0 .06
1397.....	21 .68	0 .086	18 .89	10 .84	0 .00

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	4290.0	34556	59610
1385.....	32.0	7349.0	31056	27724
1390.....	13.0	2569.0	8212	4748
1393.....	1.0	1163.0	13807	878
1394.....	17.0	1467.0	32134	2148
1395.....	7.2	535.6	11443	764
1396.....	124.0	40577.0	48880	642
1397.....	13.6	531.5	14434	700
East Azarbayejan.....	0.0	0.0	0	0
West Azarbayejan.	0.0	20.0	0	0
Esfahan	0.0	0.0	78	0
Alborz	0.0	0.0	0	0
Ilam	0.0	0.0	40	0
Bushehr	0.0	57.0	0	0
Tehran	0.0	0.0	184	0
South Khorasan.....	0.5	43.0	621	0
Khorasan-e-Razavi.....	3.0	120.0	1080	0
North Khorasan.....	0.0	0.0	0	0
Khuzestan	0.0	0.0	11720	0
Semnan	0.5	40.0	0	700
Sistan & Baluchestan	9.6	43.5	0	0
Fars	0.0	0.0	0	0
Qazvin.....	0.0	0.0	0	0
Qom.....	0.0	0.0	0	0
Kerman	0.0	115.0	70	0
Golestan	0.0	0.0	308	0
Markazi	0.0	93.0	283	0
Hormozgan	0.0	0.0	0	0
Hamadan	0.0	0.0	50	0
Yazd	0.0	0.0	0	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	489.0	1650	468	0	703937	289
1385.....	230.0	4452	42	1087	816831	254
1390.....	72.0	0	23	518	408404	8000
1393.....	92.0	0	1	1493	247073	23
1394.....	77.0	605	17	336	210602	0
1395.....	28.0	7	318	808	693816	25
1396.....	37.0	21416	290	1476	785346	78
1397.....	38.1	10622	0	465	457218	0
East Azarbayejan.....	0.0	0	0	0	0	0
West Azarbayejan	0.0	0	0	90	0	0
Esfahan	0.0	0	0	135	53571	0
Alborz	0.0	425	0	0	1500	0
Ilam	0.0	0	0	0	0	0
Bushehr.	0.0	0	0	0	0	0
Tehran	0.0	0	0	0	47200	0
South Khorasan.....	11.0	0	0	0	0	0
Khorasan-e-Razavi.....	13.0	0	0	0	100	0
North Khorasan.....	0.0	0	0	0	0	0
Khuzestan	0.0	8020	0	0	112000	0
Semnan	14.0	550	0	48	100000	0
Sistan & Baluchestan	//	0	0	0	0	0
Fars	0.0	0	0	0	0	0
Qazvin.....	0.0	0	0	0	10500	0
Qom.....	0.0	1157	0	0	6787	0
Kerman	0.0	0	0	192	0	0
Golestan	0.0	0	0	0	0	0
Markazi.	0.0	470	0	0	125000	0
Hormozgan	0.0	0	0	0	0	0
Hamadan	0.0	0	0	0	0	0
Yazd	0.0	0	0	0	560	0

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

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	1393	1394	1395	1396	1397
<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	1877	283	1112.50	755.0	206.0
Preparation of range management plans.....	1000 ha	1009	1531	462	36	38	16.00	525.0	8.0
Range and livestock grazing management in range allotments.....	1000 ha	11059	59728	25732	4641	4018	4562.00	4946.0	1884.0
<i>Improvement and rehabilitation of rangelands⁽²⁾</i>									
Improvement and rehabilitation of rangelands project.....	1000 ha	0	136	0	0	0	0.00	0.0	0.0
<i>Rehabilitation and restoration of rangelands⁽²⁾</i>									
Transplanting seedlings.....	1000 ha	17	4	1	1	2	1.00	5.0	3.4
Direct seeding and hoeing....	1000 ha	61	49	19	6	5	0.00	0.0	44.5
Fertilizer spreading on rangelands.....	1000 ha	17	29	9	1	2	0.20	16.0	9.3
Water harvesting.....	1000 ha	59	42	43	4	3	5.98	6.4	4.3
Providing water troughs.....	Set	1581	2105	1181	632	620	269.00	806.0	1186.0
Drilling shallow wells.....	case	173	90	57	43	15	6.00	10.0	2.0
Installation of wind pumps...	Set	11	18	29	1	3	4.00	4.0	0.0
Seed production.....	Ton	468	390	1840	17	124	34.90	30.0	364.5
Restoration of pastures on degraded marginal lands.....	1000ha	11	12	4	1	1	2.00	1.5	3.7

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
1393.....	2193023	1402276	540089	250658	0
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
East Azarbayejan.....	86235	62135	20779	3321	0
West Azarbayejan	76605	56580	17006	3019	0
Ardebil	72300	57182	13949	1169	0
Esfahan	63856	44862	12807	6187	0
Alborz	15555	11309	2799	1447	0
Ilam	41681	31920	7388	2373	0
Bushehr	14858	10003	3348	1507	0
Tehran	38803	28995	5649	4159	0
Chaharmahal & Bakhtiyari .	29530	22449	4514	2567	0
South Khorasn	17486	12260	3305	1921	0
Khorasan-e-Razavi.....	147095	101113	33378	12604	0
North Khorasn	34874	23931	8381	2562	0
Khuzestan	277898	216429	45257	16212	0
Zanjan	47712	35457	9857	2398	0
Semnan	26733	18656	4175	3902	0
Sistan & Baluchestan	23952	18382	4178	1392	0
Fars.....	154953	132456	16878	5619	0
Qazvin	58676	42368	11902	4406	0
Qom.....	15303	10168	3350	1785	0
Kordestan	72530	54362	15350	2818	0
Kerman ⁽²⁾	92072	68797	14266	9009	0
Kermanshah	113376	85157	22123	6096	0
Kohgiluyeh & Boyerahmad	23254	18940	2923	1391	0
Golestan	151630	110647	27872	13111	0
Gilan	75027	57752	6484	10791	0
Lorestan	73773	59915	11222	2636	0
Mazandaran	115109	80725	16671	17713	0
Markazi	58250	42036	12012	4202	0
Hormozgan.....	14456	9982	2839	1635	0
Hamedan	81255	58474	18208	4573	0
Yazd	17532	11846	2611	3075	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	Rodenticides	Molluscocides	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
1393	1195	49	0	49	292	0	0	801	4
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

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

2. Including tablets.

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⁾	60874	62640	381	14128	26593	12344219	642	4136
1392 ⁽¹⁾	60109	61657	376	14158	26276	12937060	644	4087
1393 ⁽¹⁾	54004	55517	340	12231	23604	12474808	590	3672
1394 ⁽¹⁾	50637	51958	317	11261	22145	12522744	566	3447
1395 ⁽¹⁾	43359	44506	272	9577	18962	11940013	506	2954
1396	46306	47675	293	10227	20237	12978687	544	3152
Motor spirit	4	0	0	100	0	678	1	0
Burning oil	8	36	0	12	0	39260	2	0
Gas oil	46244	47400	289	10116	20232	8143794	456	3143
Fuel oil	51	238	4	0	5	16401	1	//
Natural gas	000	000	000	000	000	4778554	85	9

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⁾	158629	189663	2796	24428	16453	89549767	1971	266
1392 ⁽¹⁾	164975	171478	2511	15748	17114	95349977	2047	269
1393 ⁽¹⁾	172731	172418	2527	21931	17742	100215510	2133	278
1394 ⁽¹⁾	154857	107443	1542	16570	15818	93727858	1907	237
1395 ⁽¹⁾	162574	97680	1388	21695	16548	98920797	1995	244
1396	167395	93053	1306	22955	17154	102852284	2067	252
Motor sprit	644	72	0	16690	62	113448	5	1
Burning oil	37	175	0	57	0	190358	8	2
Gas oil	13427	42160	537	537	4028	7566451	306	61
Fuel oil	10729	50355	769	4	1073	3464437	134	27
Liquefied gas	0	0	0	5	0	10744	//	//
Natural gas	142559	291	0	5662	11991	90041930	1605	161
Coke gas	000	000	000	000	000	162308	4	//
Blast furnace gas	000	000	000	000	000	1302609	5	1

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⁾	870103	410405	4572	7800173	307680	126381220	42730	5802
1392 ⁽¹⁾	929150	417993	4577	8897965	320725	135987042	47279	6287
1393 ⁽¹⁾	942499	412316	4459	9035661	326293	138008816	48739	6406
1394 ⁽¹⁾	881805	370044	3943	9203127	293892	132885113	49807	6086
1395 ⁽¹⁾	922923	416376	4588	9706936	303500	140626564	51980	6371
1396	957548	393678	4165	10442866	312129	144705234	54491	6695
Motor sprit	396442	44049	0	10278117	38176	69863462	33268	3226
Gas oil	509112	316781	3771	135763	248899	53130311	2801	3269
Liquefied gas	000	000	000	000	000	14272	21	1
Natural gas	000	000	000	000	000	16618058	18366	59
Fuel oil	196	920	14	0	20	63288	000	000
Jet fuel (JP ₄)	591	66	0	15330	0	104786	1	3
Jet oil fuel (KTA)	51207	31862	379	13655	25034	4911057	34	137
<i>Road and marine transportation</i>								
1385	813084	326264	3433	9466815	254052	107402790	0	0
1390 ⁽¹⁾	823527	381935	4235	7762103	285302	121757727	42651	5328
1392 ⁽¹⁾	880262	387955	4221	8865807	297118	131150153	47192	5762
1393 ⁽¹⁾	889881	380049	4076	8997844	300933	132795177	48646	5848
1394 ⁽¹⁾	827816	336814	3548	9170479	267777	127558607	49714	5529
1395 ⁽¹⁾	861458	378535	4139	9670292	273760	134561610	51872	5724
1396	892160	353299	3685	10410004	280455	138272157	54377	6008
Motor sprit	396432	44048	0	10277862	38175	69863462	33268	3226
Gas oil	495532	308331	3671	132142	242260	51713077	2722	2722
Liquefied gas	000	000	000	000	000	14272	21	1
Natural gas	000	000	000	000	000	16618058	18366	59
Fuel oil	196	920	14	//	20	63288	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
1392	10435	6493	77	2783	5102	1088999	61	420
1393 ⁽¹⁾	11043	6871	82	2945	5399	1152433	65	445
1394 ⁽¹⁾	10908	6787	81	2909	5333	1138345	64	439
1395 ⁽¹⁾	12788	7957	95	3410	6252	1334546	75	515
1396	13580	8450	101	3621	6639	1417234	79	547
Gas oil	13580	8450	101	3621	6639	1417234	79	547
<i>Air transportation</i>								
1385	32561	19565	231	43565	15385	3293955	0	0
1390 ⁽¹⁾	37341	22724	269	35607	17863	3659817	26	102
1392 ⁽¹⁾	38453	23545	279	29375	18505	3747890	26	105
1393	41575	25395	301	34872	19962	4061206	28	114
1394 ⁽¹⁾	43081	26442	314	29739	20783	4188161	29	117
1395 ⁽¹⁾	48677	29885	355	33234	23488	4730408	33	132
1396	51808	31929	379	29241	25035	5015843	35	140
Jet fuel (JP ₄)	591	66	0	15330	0	104786	1	3
Jet oil fuel (KTA)	51207	31862	379	13655	25034	4911057	34	137
Motor spirit	10	1	0	256	1	000	000	000

1. Revised figures.

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⁾	115869	52887	582	47115	11284	136843166	3836	492
1392 ⁽¹⁾	116633	51092	578	45572	11347	138208056	4246	542
1393 ⁽¹⁾	115371	37504	397	48090	11205	137273662	4168	523
1394 ⁽¹⁾	116805	30078	296	47057	11368	127988310	4170	518
1395 ⁽¹⁾	125157	28458	275	47677	12212	147090792	4305	529
1396.....	118398	26289	255	45706	11596	139254025	4141	509
Motor spirit.....	688	76	0	17840	66	121266	5	1
Burning oil.....	1354	6500	0	2113	0	7052720	294	59
Gas oil.....	4962	15582	198	198	992	2796516	113	23
Fuel oil.....	782	3668	56	0	78	252390	10	2
Liquefied gas	1088	24	0	10878	0	4993956	79	8
Natural gas.....	109524	438	0	14676	10460	118430787	2111	211
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	//	//
Coal.....	000	000	000	000	000	40801	//	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 ⁽¹⁾	000	000	000	000	000	12227299	263	34
1392 ⁽¹⁾	000	000	000	000	000	16304679	339	42
1393 ⁽¹⁾	000	000	000	000	000	15574965	322	40
1394 ⁽¹⁾	000	000	000	000	000	15049435	302	36
1395 ⁽¹⁾	000	000	000	000	000	15297163	322	40
1396.....	000	000	000	000	000	15965245	313	35
Gas oil.....	000	000	000	000	000	353143	14	3
Fuel oil.....	000	000	000	000	000	705723	27	5
Natural gas.....	000	000	000	000	000	10574741	188	19
Refinery gas.....	000	000	000	000	000	3975628	77	8
Liquefied gas	000	000	000	000	000	356010	6	1

1. Revised figures.

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
1392 ⁽¹⁾	678024	910658	6574	162707	36199	179825215	4725	803
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
Ministry of Energy								
Gas oil.....	16107	9724	288	636	1195	3510950	137	27
Natural gas.....	214743	0	0	87495	6418	58373612	1031	103
Fuel oil.....	29479	167888	781	45066	3269	12761325	409	82
Private sector								
Gas oil.....	76307	32277	873	1072	3624	10491476	415	83
Natural gas.....	295559	0	2	19078	9645	88013487	1549	155
Fuel oil.....	4394	29697	100	17	417	1656324	52	10
large industries								
Gas oil.....	17	37	1	4	3	7055	//	//
Natural gas.....	15226	0	0	2732	588	4934185	94	9
Coke gas ⁽²⁾	000	000	000	000	000	85258	2	//
Blast furnace gas ⁽²⁾	000	000	000	000	000	2913241	11	1

1. In the year 1392, kerosene delivered to the Ministry of Energy was mixed with gas oil to be consumed in power plants. Due to the unavailability of the emission coefficient of the kerosene consumed in power plants, the emission amount of the pollutants of this energy carrier was not considered in the calculations.

2. 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 1396 (ton)

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
<i>Total.....</i>	<i>651833</i>	<i>239623</i>	<i>2044</i>	<i>156100</i>	<i>25159</i>	<i>182746913</i>	<i>3701</i>	<i>471</i>
<i>Ministry of Energy</i>								
Thermal plant.....	149304	168651	793	128863	6668	43218311	953	137
Gas power plant.....	45903	5369	158	1871	2381	18700147	352	43
Combined cycle.....	64982	3166	111	2464	1806	12650968	269	32
Diesel power plant.....	141	426	7	0	27	76461	3	1
<i>Private sector</i>								
Thermal plant.....	50537	29965	106	13076	2039	17045011	312	37
Gas power plant.....	66329	17227	382	2126	5158	38623787	756	94
Combined cycle.....	259395	14782	487	4965	6490	44492489	949	118
large industries.....	15243	37	1	2736	591	7939739	108	11

Source: Ministry of Energy.

2.16. COVERAGE OF URBAN SEWAGE EXTENSION

Ostan	Year					
	1390		1393		1394	
	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	258	1125	280	1144	286
East Azarbayejan	57	12	58	12	58	12
West Azarbayejan.....	38	10	38	11	38	11
Ardebil	23	7	23	8	26	8
Esfahan	97	27	105	31	104	31
Alborz	17	4	19	7	19	7
Ilam.....	19	4	19	4	19	4
Bushehr.....	16	3	33	3	33	3
Tehran	41	7	41	8	41	8
Chaharmahal & Bakhtiari.....	26	7	34	8	38	8
South Khorasan.....	19	1	21	1	21	1
Khorasan-e-Razavi	71	5	74	7	74	8
North Khorasan.....	18	2	18	2	21	2
Khuzestan	63	18	62	17	62	17
Zanjan.....	18	2	19	2	21	3
Semnan	17	5	19	6	19	6
Sistan & Baluchestan.....	36	2	37	4	37	4
Fars	79	6	81	7	81	8
Qazvin	26	10	26	14	26	14
Qom	2	1	6	1	6	1
Kordestan.....	23	19	24	18	24	18
Kerman	63	2	69	2	69	2
Kermanshah	27	27	27	27	28	28
Kohgiluyeh & Boyerahmad.....	12	2	15	3	15	3
Golestan.....	21	4	22	4	22	4
Gilan	48	33	48	33	50	34
Lorestan	23	7	24	7	24	7
Mazandaran	46	7	52	7	54	7
Markazi.....	29	7	30	8	33	8
Hormozgan	33	4	36	5	36	6
Hamedan.....	29	11	29	11	29	11
Yazd	18	2	16	2	16	2

2.16. COVERAGE OF URBAN WASTEWATER EXTENSION (continued)

Ostan	Year					
	1395		1396		1397	
	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.....	1154	295	1167	316	1172	330
East Azarbayejan.....	60	12	61	14	62	14
West Azarbayejan.....	38	11	38	11	38	11
Ardebil	26	9	26	9	26	9
Esfahan	104	31	104	34	104	38
Alborz.....	19	10	19	10	19	10
Ilam.....	19	5	19	5	19	6
Bushehr.....	33	3	32	3	32	3
Tehran	41	8	45	18	46	18
Chaharmahal & Bakhtiari.....	39	9	39	12	39	14
South Khorasan	24	1	24	1	25	1
Khorasan-e-Razavi	74	8	74	8	74	8
North Khorasan	21	2	21	3	21	3
Khuzestan	62	17	62	17	59	17
Zanjan.....	21	4	21	4	21	5
Semnan.....	19	6	19	6	19	6
Sistan & Baluchestan.....	37	4	37	4	37	4
Fars	83	8	82	8	83	8
Qazvin	26	14	26	14	26	14
Qom	6	1	6	1	6	1
Kordestan	24	18	27	18	27	21
Kerman	69	2	71	3	71	4
Kermanshah	28	27	28	26	31	28
Kohgiluyeh & Boyerahmad.....	15	3	16	3	16	3
Golestan.....	22	4	22	4	22	4
Gilan.....	50	35	50	36	50	36
Lorestan.....	24	7	24	7	24	7
Mazandaran	57	7	58	8	58	8
Markazi.....	32	8	33	8	33	8
Hormozgan	36	6	36	6	36	6
Hamedan.....	29	12	29	12	30	12
Yazd	16	3	18	3	18	3

Source: National Water and Wastewater Engineering Company.

2.17. NUMBER OF WASTEWATER-TREATMENT PLANTS

Ostan	Year						
	1385	1390	1393	1394	1395	1396	1397
Total country	90	137	156	164	182	203	223
East Azarbayejan.....	5	7	9	9	10	11	11
West Azarbayejan.....	4	7	7	8	9	10	12
Ardebil.....	3	3	3	3	4	4	6
Esfahan.....	16	21	24	24	25	27	27
Alborz.....	000 ⁽¹⁾	1	1	1	4	4	4
Ilam.....	3	4	4	4	5	5	6
Bushehr.....	2	3	3	3	3	3	3
Tehran.....	9 ⁽¹⁾	10	13	13	14	23	23
Chaharmahal & Bakhtiari.....	4	5	5	5	6	6	6
South Khorasan.....	1	1	1	1	1	1	1
Khorasan-e-Razavi.....	5	7	7	10	12	13	12
North Khorasan.....	1	2	2	2	2	2	4
Khuzestan.....	4	6	7	7	8	8	10
Zanjan.....	2	2	2	2	3	3	4
Semnan.....	2	3	3	3	5	5	5
Sistan & Baluchestan.....	1	2	2	2	2	3	3
Fars.....	2	2	3	4	4	4	6
Qazvin.....	3	4	4	4	6	6	6
Qom.....	1	2	2	3	3	3	3
Kordestan.....	1	3	4	5	5	6	6
Kerman.....	1	1	2	1	1	3	3
Kermanshah.....	5	7	7	7	7	7	8
Kohgiluyeh & Boyerahmad.....	1	1	2	2	3	3	5
Golestan.....	2	3	4	4	4	4	4
Gilan.....	1	2	4	4	4	4	4
Lorestan.....	2	4	4	4	4	4	6
Mazandaran.....	2	6	6	6	6	6	6
Markazi.....	4	9	10	11	11	11	12
Hormozgan.....	1	5	4	4	4	6	7
Hamedan.....	1	3	5	5	5	6	8
Yazd.....	1	1	2	3	2	2	2

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		1393		1394	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country	4247278	3896159	5743982	5219090	6109084	5526748
East Azarbayejan.....	393974	364045	519041	467838	558518	504681
West Azarbayejan.....	252191	238837	312857	297218	326858	310424
Ardebil.....	75527	70010	119750	110356	129310	119375
Esfahan.....	507722	461324	588565	530868	611934	550526
Alborz.....	24029	21211	65432	60174	81810	75307
Ilam.....	41812	38854	52468	47756	56308	51378
Bushehr.....	24602	24050	32344	31332	34092	32970
Tehran.....	325535	305403	790862	737967	869620	785728
Chaharmahal & Bakhtiari.....	87155	81002	104960	97387	111713	103467
South Khorasan.....	27448	25866	41480	38824	43923	40766
Khorasan-e-Razavi.....	342256	285455	461304	373896	487169	398294
North Khorasan.....	33859	30227	48283	43355	49892	44682
Khuzestan.....	437089	391809	486621	436251	499826	448522
Zanjan.....	27402	25794	35850	33874	36299	34382
Semnan.....	26635	25582	40688	39148	45458	43624
Sistan & Baluchestan.....	33620	32867	47085	46332	50995	50117
Fars.....	173651	159830	217291	206180	217872	206833
Qazvin.....	103000	99541	151890	127724	159807	134469
Qom.....	34777	34196	56002	54179	67426	65044
Kordestan.....	218782	206899	276649	251330	291545	265696
Kerman.....	8238	7483	18080	16184	25207	22938
Kermanshah.....	293663	269395	324791	295641	330305	301155
Kohgiluyeh & Boyerahmad.....	15278	14475	22889	21469	28290	26456
Golestan.....	13460	12499	24757	22789	28107	25800
Gilan.....	219845	189115	249422	213537	257440	219074
Lorestan.....	141375	132592	175714	165548	201902	187665
Mazandaran.....	13040	12728	32495	31929	34633	33573
Markazi.....	114731	107539	138428	127755	146598	135099
Hormozgan.....	53388	48763	69335	61114	71391	62520
Hamedan.....	157244	154435	207941	202470	220277	213983
Yazd.....	25950	24333	30708	28665	34559	32200

2.18. CUSTOMERS OF URBAN SEWAGE (continued)

Ostan	Year					
	1395		1396		1397	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country	6491495	5863674	7166860	6528634	7601152	6935823
East Azarbayejan.....	610224	546310	672459	600836	722407	645976
West Azarbayejan	347996	330563	360751	342574	371659	352867
Ardebil	140493	128204	151045	139074	161610	147964
Esfahan	635946	571401	660696	591713	686772	614556
Alborz.....	93370	87475	102134	93623	116262	108969
Ilam	59690	54475	64347	58464	73209	66125
Bushehr	37306	35911	65245	60851	70791	65817
Tehran	937564	851533	974037	885054	1008299	930710
Chaharmahal & Bakhtiyari	125196	113171	131691	118930	140418	126913
South Khorasan	47209	43723	51175	47338	56600	52455
Khorasan-e-Razavi.....	520606	430267	813870	752907	891625	825028
North Khorasan	51879	45617	54993	48391	56765	49995
Khuzestan	512951	460316	528087	473574	542563	486029
Zanjan.....	43068	40905	50302	47913	66204	62365
Semnan.....	51482	49105	56960	54308	59724	56643
Sistan & Baluchestan	51201	48754	54376	51727	56893	54173
Fars	232256	220127	251717	237895	268772	253582
Qazvin	169501	143341	174814	148041	183859	156685
Qom	78731	76004	87898	85518	103097	100373
Kordestan	302879	276111	333704	305060	352552	322283
Kerman	28780	26227	32233	29655	35551	32788
Kermanshah	333713	304079	340649	309038	353217	320475
Kohgiluyeh & Boyerahmad	34267	31555	40952	37434	51480	47023
Golestan	29996	27443	32067	29154	33345	30173
Gilan.....	262805	223533	271766	230341	279544	235640
Lorestan.....	213191	191169	223345	200623	245190	217313
Mazandaran.....	38321	37043	43919	40787	47342	44403
Markazi	159015	146528	166613	153897	171734	158001
Hormozgan.....	74554	64965	78435	68252	80811	70010
Hamedan	230677	223827	242702	234613	253833	244986
Yazd	36628	33992	53878	51049	59024	55503

Source: National Water and Wastewater Engineering Company.

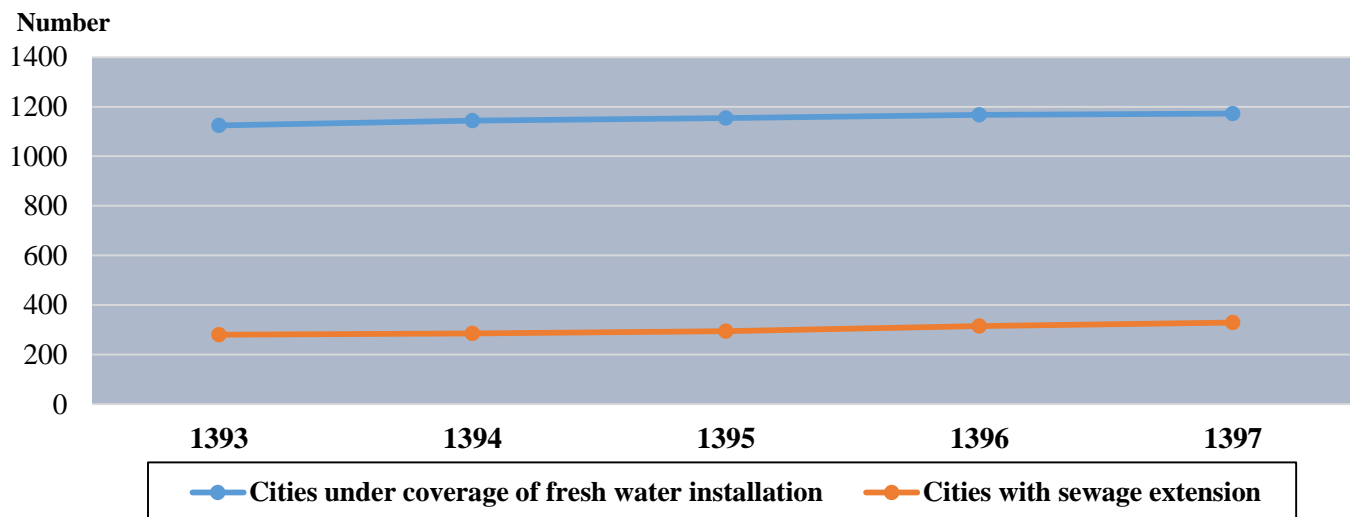
2.19. POPULATION UNDER COVERAGE OF COLLECTION AND REMOVAL SERVICES OF URBAN SEWAGE (percent)

Ostan	Year						
	1385	1390	1393	1394	1395	1396	1397
<i>Total country</i>	27	37	42	44	47	49	51
East Azarbayejan	39	54	57	57	60	64	66
West Azarbayejan.....	41	56	61	62	63	64	65
Ardebil	27	41	47	47	49	51	53
Esfahan	43	58	62	69	64	66	67
Alborz.....	000 ⁽¹⁾	11	16	24	28	31	31
Ilam.....	29	38	46	49	49	51	54
Bushehr.....	19	23	24	24	25	27	23
Tehran	18 ⁽¹⁾	24	32	37	42	45	47
Chaharmahal & Bakhtiari.....	43	54	53	54	53	55	61
South Khorasan.....	21	28	30	30	30	37	33
Khorasan-e-Razavi	15	36	48	49	53	55	59
North Khorasan.....	21	28	31	32	34	31	32
Khuzestan	47	53	56	57	61	61	62
Zanjan	8	18	29	27	31	34	37
Semnan	11	14	19	21	23	24	28
Sistan & Baluchestan.....	8	12	17	18	19	23	24
Fars	11	24	28	29	35	39	40
Qazvin	41	55	68	66	62	63	71
Qom	14	20	28	33	34	30	34
Kordestan.....	75	97	91	92	92	95	96
Kerman	3	5	8	10	11	11	13
Kermanshah	52	64	65	86	86	87	87
Kohgiluyeh & Boyerahmad.....	13	18	23	20	28	31	36
Golestan.....	6	10	13	15	16	16	16
Gilan	54	62	68	67	68	70	70
Lorestan	40	54	55	58	58	57	67
Mazandaran	3	6	11	13	11	12	16
Markazi.....	36	52	54	61	62	64	67
Hormozgan	28	34	45	48	51	56	58
Hamedan.....	44	60	65	67	71	72	74
Yazd.....	7	12	20	21	23	39	40

1. The statistics for Alborz are included with Tehran.

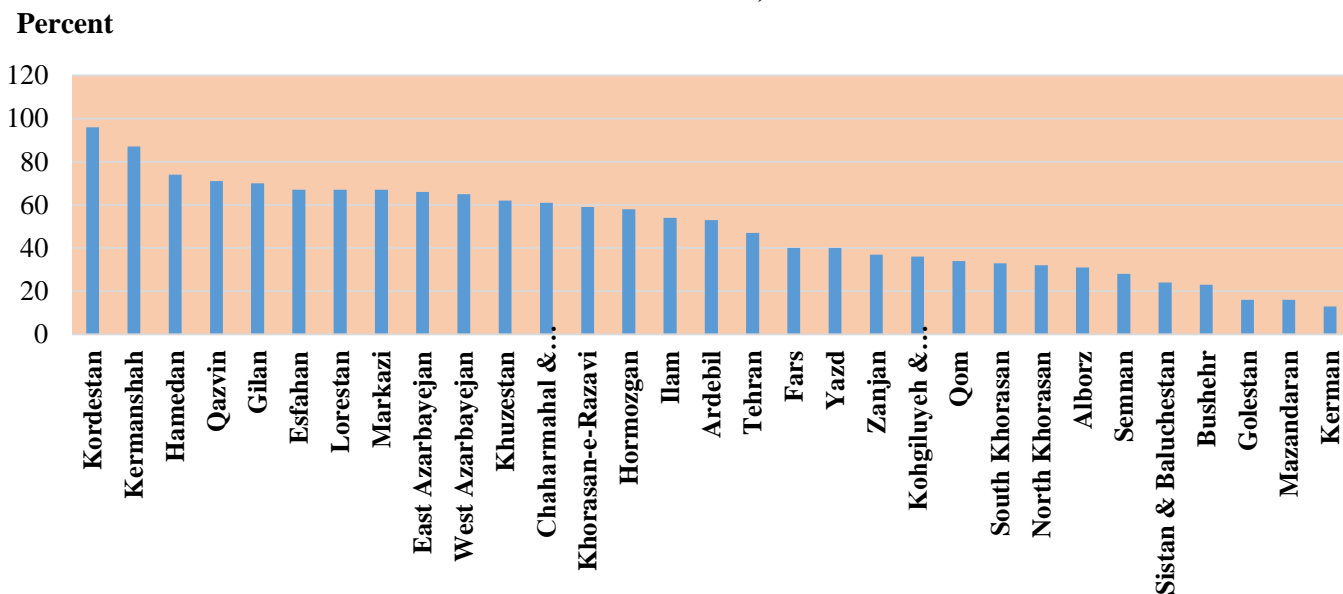
Source: National Water and Wastewater Engineering Company.

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 1397



For data see Table 2.19.

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

Ostan	Year						
	1385	1390	1393	1394	1395	1396	1397
Total country	1938898	2863322	3848013	4242400	4401032	4891631	6039958
East Azarbayegan.....	88428	207648	257622	283262	274707	324332	336444
West Azarbayegan.....	121300	182430	223043	231530	243865	254373	257486
Ardebil	28640	47124	91623	95612	97418	76031	72158
Esfahan	390450	446526	427541	474923	482765	453791	475621
Alborz.....	000 ⁽¹⁾	26897	61645	89443	113241	128918	136717
Ilam.....	13400	21460	27224	28012	29848	33857	33938
Bushehr.....	17850	35262	36377	41820	44747	49457	59080
Tehran	495872 ⁽¹⁾	567088	367944	659753	801166	802295	2056032
Chaharmahal & Bakhtiari	40256	45210	49277	52732	55256	58382	57566
South Khorasan.....	4060	8024	10490	13119	12895	15016	16522
Khorasan-e-Razavi	101370	159200	206370	221531	227268	281454	306287
North Khorasan.....	10890	15200	16459	17741	18827	19163	19512
Khuzestan	102090	130700	725611	768789	579329	810433	554873
Zanjan.....	3100	14230	21219	30340	31858	31527	38982
Semnan	900	6420	6233	10274	10905	11072	11986
Sistan & Baluchestan.....	8620	13150	16793	17269	17591	16727	18707
Fars	34112	129760	148211	154392	165658	178147	195671
Qazvin	22360	75240	90868	52954	97099	101141	104251
Qom	15620	53248	62400	69339	63022	63884	66084
Kordestan.....	51260	75246	192393	179008	192380	196412	206955
Kerman	1850	7122	15788	16983	17918	22331	25315
Kermanshah	126854	163580	228427	261228	234976	223230	260441
Kohgiluyeh & Boyerahmad.....	1230	2841	10834	13388	20822	23080	23652
Golestan.....	984	8500	18002	21812	24171	26646	30719
Gilan	81254	120461	168786	179343	176189	191066	194320
Lorestan	61258	88546	86921	10558	85471	159362	124096
Mazandaran	5200	14200	43973	33840	48041	44144	53135
Markazi.....	34560	72121	89750	92699	98914	115137	123488
Hormozgan	20150	40293	52792	55407	54616	71071	71041
Hamedan.....	49560	76541	79021	49274	60791	87743	91867
Yazd.....	5420	9054	14376	16025	19278	21409	17011

1. 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		1393		1394	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country.....	42391	2390	51147	2703	53334	2776
East Azarbayejan.....	2420	22	2879	50	3096	60
West Azarbayejan.....	2278	58	2583	64	2709	66
Ardebil	933	32	1098	39	1125	44
Esfahan	5941	363	6921	392	7231	407
Alborz	508	26	765	30	815	30
Ilam.....	683	15	764	24	806	24
Bushehr.....	455	48	473	48	492	48
Tehran	4671	80	6515	124	6928	153
Chaharmahal & Bakhtiari..	886	73	977	85	1070	85
South Khorasan.....	308	20	427	22	452	22
Khorasan-e-Razavi	2830	290	3558	300	3434	289
North Khorasan.....	274	18	359	23	374	26
Khuzestan	3798	435	5309	592	5376	625
Zanjan	363	10	427	14	435	14
Semnan	303	18	421	27	462	27
Sistan & Baluchestan.....	459	16	614	30	654	30
Fars	2043	181	2185	209	2322	212
Qazvin	1028	49	1207	49	1230	49
Qom	672	8	803	15	841	15
Kordestan.....	1453	122	1571	155	1600	134
Kerman	351	11	498	11	520	11
Kermanshah	2645	232	2627	107	2704	110
Kohgiluyeh & Boyerahmad..	235	30	255	31	285	21
Golestan.....	484	23	548	24	551	26
Gilan	644	45	679	53	687	53
Lorestan	1179	31	1362	35	1430	35
Mazandaran	593	18	691	18	825	20
Markazi.....	1345	31	1485	31	1552	31
Hormozgan	750	16	828	24	849	26
Hamedan.....	1233	49	1325	56	1351	59
Yazd.....	626	20	994	23	1129	23

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

Ostan	Year					
	1395		1396		1397	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country	55626	2982	59311	3145	62156	3331
East Azarbayegan.....	3261	60	3469	86	3617	88
West Azarbayegan.....	2823	70	2969	77	3087	84
Ardebil	1163	44	1196	45	1293	48
Esfahan	7461	414	7840	430	8152	439
Alborz	858	34	918	34	986	36
Ilam.....	835	24	895	24	953	25
Bushehr.....	510	48	533	48	553	54
Tehran	7186	268	8324	314	8365	320
Chaharmahal & Bakhtiari...	1102	88	1193	92	1238	94
South Khorasan.....	463	22	510	24	532	31
Khorasan-e-Razavi	3995	309	4376	313	4592	316
North Khorasan.....	395	26	450	28	480	28
Khuzestan	5452	639	5530	649	6025	756
Zanjan	452	14	468	15	501	16
Semnan	460	27	506	27	534	28
Sistan & Baluchestan.....	666	30	679	30	703	30
Fars	2458	223	2697	243	3005	257
Qazvin	1263	53	1281	57	1321	60
Qom	878	15	960	15	972	15
Kordestan.....	1729	147	1751	148	1776	150
Kerman	551	12	625	16	768	22
Kermanshah	2718	112	2735	114	2811	115
Kohgiluyeh & Boyerahmad..	292	21	341	21	431	21
Golestan.....	553	27	564	27	569	24
Gilan	691	53	669	56	735	57
Lorestan	1474	35	1566	35	1623	35
Mazandaran	868	20	881	21	927	23
Markazi.....	1608	32	1673	39	1697	39
Hormozgan	864	28	897	29	951	31
Hamedan.....	1379	59	1452	59	1526	60
Yazd.....	1218	28	1363	29	1429	29

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
1393	169	30	55
1394	187	21	47
1395	193	19	49
1396 ^(2,3)	188	15	45
1397⁽³⁾	182	17	28
East Azarbayejan	9	1	4
West Azarbayejan	7	2	0
Ardebil	4	0	1
Esfahan	13	2	3
Alborz	3	0	0
Ilam	2	0	0
Bushehr	1	0	0
Tehran	8	1	3
Chaharmahal & Bakhtiari	3	0	0
South Khorasan	2	0	0
Khorasan-e-Razavi	8	0	1
North Khorasan	4	0	0
Khuzestan	8	2	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	4	2
Lorestan	3	2	0
Mazandaran	14	1	3
Markazi	10	0	1
Hormozgan	2	0	0
Hamedan	9	0	2
Yazd	4	0	3

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

2. Revised figures.

3. 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
1393	6604
1394	7337
1395	7505
1396	7760
1397	7920
East Azarbayejan	324
West Azarbayejan	134
Ardebil	225
Esfahan	668
Alborz	124
Ilam	46
Bushehr	89
Tehran	847
Chaharmahal & Bakhtiari	269
South Khorasan	70
Khorasan-e-Razavi	895
North Khorasan	43
Khuzestan	220
Zanjan	163
Semnan	554
Sistan & Baluchestan	300
Fars	539
Qazvin	185
Qom	331
Kordestan	51
Kerman	425
Kermanshah	230
Kohgiluyeh & Boyerahmad	86
Golestan	133
Gilan	169
Lorestan	34
Mazandaran	152
Markazi	285
Hormozgan	45
Hamedan	90
Yazd	193

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

Source: Ministry of Industry, Mine and Trade.

