

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: They are areas 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: They are areas 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: They are 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: They are 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: It refers to the vapor of H₂O, CO₂, NO₂, CH₄, O₃, HFCs, and PFCs are called greenhouse gases.

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

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

Pole: It refers to wood from the trunk of a tree the

chest-high diameter of which is between 8 and 30 centimetres.

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

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

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

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

Living windbreak: It is 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: This refers to 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: It is a selection and declaration of the areas of regions with high erosion or sensitive to erosion.

Forest: It refers to 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 saplings and nurseries created for the purpose of forest protection and development of forests are considered as a forest.

Sewage extension: It 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: This refers to 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:

It 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: It refers to 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: It 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 1399, the area of zones protected by the Iran Department of Environment was about 18996161 hectares, of which the Ostans of Kerman with 2409268 hectares and Alborz with 8467 hectares had the highest and lowest areas respectively. In this year a number of 3683 conflagrations happened in the forests and ranges which shows a rise of 45 percent in comparison with the previous year.

In the year 1398, among the pollutant and greenhouse gases resulting from the burning of fuels in the transportation sector, CO₂ with 156389355 tons had the greatest portion; namely 92.1% 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 1399, 52 percent of the population of the country was under the coverage of the network for collection and transmission services of urban sewage. The highest share of the population under the coverage of this network belongs to the Ostan of Kordestan with 95 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 1399, the average volume of collected wastewater was 5720555 cu m which shows a 0.7 percent rise compared to the year 1398. The Ostans of Tehran and Khuzestan with 21.2 percent and 9.2 percent had the most collected wastewater volume and the Ostans of Yazd and South Khorasan with 0.4 percent of total nation's wastewater had the lowest volumes.

2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1399 (hectare)

Ostan	Total		National park		Wildlife habitat	
	Number	Area	Number	Area	Number	Area
Total country.....	309	18996161	32	2075115	56	6460026
East Azarbayejan.....	13	590405	2	16048	1	90752
West zarbayejan	8	663596	1	543829	2	5767
Ardebil	5	170519	0	0	0	0
Esfahan.....	14	1607757	3	113911	6	1157512
Alborz	1	8467	0	0	0	0
Ilam	6	137462	0	0	0	0
Bushehr	8	180946	2	68649	1	2087
Tehran	11	470896	3	55177	0	0
Chaharmahal & Bakhtiyari .	8	206527	1	4365	1	44448
South Khorasan.....	10	1985615	0	0	3	1575255
Khorasan-e-Razavi.....	28	1039268	1	35585	3	90301
North Khorasan.....	11	194080	3	30632	1	69358
Khuzestan.....	15	707929	2	11558	2	331041
Zanjan	4	295994	0	0	1	29829
Semnan.....	9	2157880	3	549948	2	460876
Sistan & Baluchestan	9	982257	0	0	1	292637
Fars.....	13	1255064	3	244976	2	187685
Qazvin	3	115838	0	0	0	0
Qom.....	1	34126	0	0	0	0
Kordestan	8	261966	0	0	1	3291
Kerman.....	16	2409268	1	152711	4	1431557
Kermanshah	9	233632	0	0	3	84672
Kohgiluyeh& Boyerahmad .	8	208699	1	25820	0	0
Golestan	5	178205	1	91307	0	0
Gilan	15	133444	1	3444	5	4191
Lorestan.....	7	321758	0	0	2	25650
Mazandaran.....	23	630670	2	36979	5	84250
Markazi	7	153504	1	12147	2	27866
Hormozgan.....	17	706739	0	0	3	4415
Hamedan	6	62198	0	0	0	0
Yazd	11	891450	1	78029	5	456586

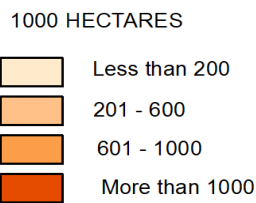
2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1399 (continued) (hectare)

Ostan	Protected zones		National natural heritages	
	Number	Area	Number	Area
Total country	181	10387035	40	40983
East Azarbayejan.....	9	476896	1	1447
West zarbayejan	4	117402	1	2
Ardebil	3	163788	2	7816
Esfahan.....	4	302817	1	6
Alborz ⁽¹⁾	1	8467	0	0
Ilam	4	134923	2	1524
Bushehr	3	103769	2	7306
Tehran ⁽¹⁾	5	415585	3	4495
Chaharmahal & Bakhtiari	5	143958	1	413
North Khorasan	7	416585	0	0
Khorasan-e-Razavi	21	897233	3	9755
South Khorasan	4	95979	3	85
Khuzestan.....	10	367079	1	45
Zanjan.....	3	269375	0	0
Semnan.....	4	1140007	0	0
Sistan & Baluchestan	4	690044	4	239
Fars.....	8	781691	0	0
Qazvin	3	115838	0	0
Qom.....	1	34126	0	0
Kordestan	5	258247	2	77
Kerman.....	10	780286	1	//
Kermanshah	4	148424	2	17
Kohgiluyeh & Boyerahmad	7	184271	0	0
Golestan	4	91912	0	0
Gilan.....	5	124926	4	261
Lorestan.....	4	295062	1	1
Mazandaran ⁽¹⁾	13	500298	3	5530
Markazi	3	120549	1	4
Hormozgan.....	13	691772	1	1956
Hamedan	6	62198	0	0
Yazd	4	453528	1	2

1. Central Alborz Protected Area is located in three Ostans namely Ostans of Tehran, Alborz, and Mazandaran and the greatest area of this protected region is located in Alborz and has been recorded in this Ostan

Source: Iran Department of Environment.

2.1. AREA OF ZONS PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT 1399



For data see Table 2.1.

2.2. AREA OF FORESTS, RANGES AND DESERTS BY OSTAN, THE YEAR 1399 (hectare)

Ostan	Forests	Ranges				Desert phenomena ⁽¹⁾
		Total	Good (dense)	Fair (semi-dense)	Poor (low dense)	
Total country	15066534	83309167	5421990	20930847	56956329	29043513
East Azarbayejan	166498	2340176	843974	1152036	344166	265229
West zarbajejan.....	73545	2218544	733316	1123041	362187	41452
Ardebil	45875	819342	360873	435698	22771	661
Esfahan	452417	6412581	121163	802626	5488792	2341232
Alborz.....	17373	340590	132667	150970	56953	13296
Ilam	651425	994297	29293	473158	491846	5626
Bushehr	290441	1189695	9314	233674	946707	102305
Tehran	51618	796090	151277	388437	256376	74304
Chaharmahal & Bakhtiyari ...	394145	851262	178624	454502	218136	3081
South Khorasan.....	687397	7684476	6057	521290	7157129	5116233
Khorasan-e-Razavi	596367	6709732	142304	2101545	4465883	482302
North Khorasan.....	293240	1679224	78707	1013628	586889	13022
Khuzestan	802980	2415111	128901	1254697	1031512	275443
Zanjan	55297	980250	231214	512710	236326	10761
Semnan	241413	4211586	51722	805605	3354259	4594366
Sistan & Baluchestan	882245	10899960	10298	580126	10309536	4609273
Fars	2602254	6647428	139805	1758219	4749403	210874
Qazvin.....	34862	735964	168126	438681	129158	19348
Qom.....	12047	728518	13356	154506	560656	201939
Kordestan.....	252082	1182214	356971	724146	101097	1327
Kerman	677534	8674609	61856	1507133	7105620	6892774
Kermanshah	642246	856859	86466	435331	335062	4342
Kohgiluyeh & Boyerahmad ..	852295	499866	82665	294414	122788	4741
Golestan	478521	651268	126071	399976	125221	872
Gilan.....	684740	226013	121134	97816	7063	1601
Lorestan.....	1094831	864557	140411	643613	80533	7160
Mazandaran.....	1117025	587568	354317	205714	27537	6783
Markazi	26098	1608956	327559	1016798	264598	13353
Hormozgan	740307	4566282	13894	528228	4024160	1226704
Hamedan	15372	580204	207178	309518	63508	12311
Yazd.....	134044	4355944	12477	413012	3930455	2490797

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

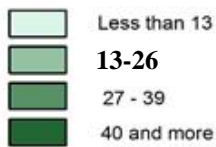
Source: Forests, Range and Watershed Management Organization.

2.2. RATIO OF FORESTS AREA TO THE AREA OF THE TOTAL OSTANS, THE YEAR 1399



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
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
1399.....	3683	1561	2122	47659	21567	26092

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	//
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
1399⁽²⁾.....	0.00	0.00	0.00	0.00	0.00

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

2. The above produced figures have been in compliance with the provisions of part (f) of article 38 of the law of the Sixth National Development Plan and the results of the survey implementation on wood cultivation and cultivation of hand-planted forests, public and development projects, dangerous trees carried by floods, and other samples of unavoidable harvesting of Hyrcanian forests.

Source: Forests, Range and Watershed Management Organization.

2.5. COMBATING DESERTIFICATION AND DUNE STABILIZATION ACTIVITIES

Year and Ostan ⁽¹⁾	Plant nursery (ha)	Plastic bag sapling (1000)	Plantation (ha)	Seeding (ha)	Seed gathering (ton)
1380	25.0	4290	34556	59610	489
1385.....	32.0	7349	31056	27724	230
1390.....	13.0	2569	8212	4748	72
1395.....	7.2	536	11443	764	29
1396.....	124.0	40577	48880	642	37
1397.....	13.6	532	14434	700	38
1398.....	1.7	96	40366	582	265
1399⁽²⁾.....	0.0	103	6214	509	0
East Azarbayejan.....	0.0	0	0	0	0
West Azarbayejan.....	0.0	0	115	0	0
Esfahan	0.0	0	520	259	0
Alborz	0.0	0	0	0	0
Ilam	0.0	0	0	0	0
Bushehr	0.0	60	175	0	0
Tehran	0.0	0	155	0	0
South Khorasan.....	0.0	0	950	0	0
Khorasan-e-Razavi.....	0.0	0	400	0	0
North Khorasan.....	0.0	0	265	0	0
Khuzestan	0.0	0	0	0	0
Semnan	0.0	0	0	250	0
Sistan & Baluchestan.....	0.0	43	550	0	0
Fars	0.0	0	400	0	0
Qazvin.....	0.0	0	0	0	0
Qom.....	0.0	0	150	0	0
Kerman	0.0	0	880	0	0
Golestan	0.0	0	671	0	0
Markazi.....	0.0	0	200	0	0
Hormozgan	0.0	0	400	0	0
Hamadan	0.0	0	233	0	0
Yazd	0.0	0	150	0	0

2.5. COMBATING DESERTIFICATION AND DUNE STABILIZATION ACTIVITIES (continued)

Year and Ostan ⁽¹⁾	Mulching (ha)	Windbreak (not living) (km)	Windbreak (ha)	Preservation (ha)	Preparation of projects for combating desertification (1000ha)
1380	1650	468	0	703937	289
1385.....	4452	42	1087	816831	254
1390.....	0	23	518	408404	8000
1395.....	7	318	808	693816	25
1396.....	21416	290	1476	785346	78
1397.....	10622	0	465	457218	0
1398.....	879157	125	3798	879157	38
1399⁽²⁾	644	542	2439	307370	92
East Azarbayegan.....	0	0	0	0	0
West Azarbayegan	0	0	0	0	0
Esfahan	0	15	0	4427	0
Alborz	0	0	0	1550	10
Ilam	0	0	1500	2000	10
Bushehr	0	0	0	2888	0
Tehran	0	0	0	0	0
South Khorasan.....	180	1	0	2000	10
Khorasan-e-Razavi.....	0	5	0	29118	0
North Khorasan.....	0	0	0	8500	12
Khuzestan	0	120	0	186000	0
Semnan	0	40	39	8800	0
Sistan & Baluchestan	250	0	0	7500	10
Fars	0	0	0	3300	10
Qazvin.....	0	0	0	17000	0
Qom.....	0	0	0	6787	0
Kerman	205	361	900	8500	20
Golestan	0	0	0	3500	0
Markazi	0	0	0	12000	0
Hormozgan	9	0	0	2000	10
Hamadan	0	0	0	0	0
Yazd	0	0	0	1500	0

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

2. 50 hectares were planted by tree in Mazandaran Ostan (Sari city) in the year 1399.

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	1395	1396	1397	1398	1399
<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	1113	755	206	735	5652
Preparation of range management plans.....	1000 ha	1009	1531	462	16	525	8	30	5473
Range and livestock grazing management in range allotments.....	1000 ha	11059	59728	25732	4562	4946	1884	1942	3168
<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 seedling and saplings.....	1000 ha	17	4	1	1	5	3	1	//
Direct seeding and hoeing....	1000 ha	61	49	19	0	0	45	2	3
Fertilizer spreading on rangelands	1000 ha	17	29	9	//	16	9	1	3
Water harvesting	1000 ha	59	42	43	6	6	4	1	1
Providing water troughs	Set	1581	2105	1181	269	806	1186	576	591
Drilling shallow wells	case	173	90	57	6	10	2	4	0
Installation of wind pumps...	Set	11	18	29	4	4	0	0	0
Seed production.....	Ton	468	390	1840	35	30	365	8	72
Restoration of pastures on degraded marginal lands	1000ha	11	12	4	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
1395.....	1690288	1438960	131941	119387	0
1396.....	1590614	1125689	344308 ⁽¹⁾	120617 ⁽¹⁾	0
1397.....	2132369	1595288	381481	155600	0
1398.....	2229730	1695434	327863	206433	0
1399.....	2204582	1992574	124520	87488	0
East Azarbayejan.....	84824	75830	4281	4713	0
West Azarbayejan.....	73182	66838	3014	3330	0
Ardebil.....	76679	70899	3012	2768	0
Esfahan.....	82257	63952	15432	2872	0
Alborz.....	17458	15916	688	855	0
Ilam.....	46546	44425	1315	805	0
Bushehr.....	24522	16302	7042	1178	0
Tehran.....	40460	36770	2546	1144	0
Chaharmahal & Bakhtiyari.....	27965	26568	824	574	0
South Khorasn.....	18766	16968	914	884	0
Khorasan-e-Razavi.....	140092	133083	3983	3026	0
North Khorasn.....	37883	34745	1438	1700	0
Khuzestan.....	274453	250878	16266	7309	0
Zanjan.....	51234	47375	2441	1418	0
Semnan.....	26199	24122	856	1222	0
Sistan & Baluchestan.....	32430	29387	1975	1068	0
Fars.....	187724	177511	7030	3183	0
Qazvin.....	58185	54207	1867	2111	0
Qom.....	15361	13008	553	1800	0
Kordestan.....	77149	69193	4181	3775	0
Kerman ⁽²⁾	105013	96235	4430	4348	0
Kermanshah.....	105659	101296	2855	1508	0
Kohgiluyeh & Boyerahmad.....	25482	23684	1135	662	0
Golestan.....	127492	119037	4288	4167	0
Gilan.....	73725	62792	3624	7309	0
LoRESTAN.....	67072	63360	2534	1178	0
Mazandaran.....	107632	99909	1751	5973	0
Markazi.....	56888	52082	1942	2864	0
Hormozgan.....	14589	11662	1205	1722	0
Hamedan.....	85903	77514	3342	5047	0
Yazd.....	23864	17026	5434	1404	0

1. It should be cited that an amount of 12322 tons of phosphate fertilizers and amount of 5574 tons of potash fertilizers were distributed for storage warehouses which cannot be mentioned by Ostans.

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
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	107	0	0	12	0	0	158	0
1399	194⁽³⁾	5	0	110	14	0	0	65	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	61058	62828	382	14168	26673	12376837	643	4148
1394	50419	51736	315	11213	22049	12485295	564	3432
1395	50737	52198	320	11181	22178	13238941	579	3453
1396	46926	48311	297	10363	20509	13087948	550	3194
1397 ⁽¹⁾	50373	51899	319	11068	22012	14550038	600	3429
1398	38166	39471	244	8399	16664	13869836	505	2601
Motor spirit	2	//	0	63	//	431	//	//
Burning oil	5	25	0	8	0	27111	1	//
Gas oil	38067	39019	238	8327	16655	6703889	375	2587
Fuel oil	91	426	7	//	9	29314	1	//
Natural gas	000	000	000	000	000	7109092	127	13

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	157930	187519	2769	24379	16237	89148113	1954	262
1394	154931	107676	1545	16575	15840	93055572	1906	237
1395	160549	88131	1240	19029	16412	97977471	1973	240
1396	167203	92603	1300	20546	17132	102177822	2063	251
1397	176731	90623	1259	21617	18122	108585098	2185	265
1398	181190	54586	702	20938	18466	114031152	2237	262
Motor sprit	527	59	0	13661	51	92862	4	1
Burning oil	102	492	0	160	0	533318	22	4
Gas oil	14842	46604	594	594	4453	8364057	339	68
Fuel oil	1512	7097	108	1	151	488247	19	4
Liquefied gas	0	//	000	0	0	518	//	//
Natural gas	164207	336	0	6522	13812	103715064	1849	185
Coke gas	000	000	000	000	000	87075	2	0
Blast furnace gas	000	000	000	000	000	750012	3	0

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	877374	415103	4629	7794344	311351	127119339	42746	5841
1394	879778	368762	3928	9203623	292886	132676560	49799	6075
1395	909504	407145	4475	9705862	296982	139188330	51915	6299
1396	964378	397553	4209	10446837	315524	145406114	54536	6733
1397	1033303	419611	4418	11516120	333132	155405905	57941	7221
1398	1040477	422676	4451	11602466	335320	156389355	58202	7272
Motor sprit	440728	48970	0	11426279	42441	77668054	36985	3586
Gas oil	556734	346412	4124	148462	272181	58100085	3063	3511
Liquefied gas	000	000	000	000	000	12030	18	1
Natural gas	000	000	000	000	000	16384470	18108	58
Fuel oil	210	984	15	0	21	67728	000	000
Jet fuel (JP ₄)	636	71	0	16480	61	112645	1	3
Jet oil fuel (ATK)	42170	26239	312	11245	20616	4044344	28	113
<i>Road and marine transportation</i>								
1385	813084	326264	3433	9466815	254052	107402790	0	0
1390	830800	386634	4291	7756310	288974	122496090	42667	5367
1394	827777	336794	3548	9170258	267761	127553954	49713	5529
1395	845564	367971	4011	9699925	265472	132997296	51888	5640
1396	890889	352460	3674	10395935	280074	138083562	54328	6000
1397 ⁽¹⁾	973389	382632	3979	11486125	304053	149495104	57828	6562
1398	984663	388277	4043	11571019	308287	150875784	58096	6632
Motor sprit	440718	48969	0	11426023	42440	77668054	36985	3586
Gas oil	543735	338324	4028	144996	265826	56743502	2987	2987
Liquefied gas	000	000	000	000	000	12030	18	1
Natural gas	000	000	000	000	000	16384470	18108	58
Fuel oil	210	984	15	0	21	67728	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
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 ⁽¹⁾	000	000	000	000	000	000	000	000
1398	12999	8088	96	3466	6355	1356583	76	524
Gas oil	12999	8088	96	3466	6355	1356583	76	524
<i>Air transportation</i>								
1385	32561	19565	231	43565	15385	3293955	0	0
1390	37341	22724	269	35607	17863	3659817	26	102
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
1398	42815	26311	312	27980	20678	4156989	29	116
Jet fuel (JP ₄)	636	71	0	16480	61	112645	1	3
Jet oil fuel (ATK)	42170	26239	312	11245	20616	4044344	28	113
Motor spirit	10	1	0	256	1	000	000	000

1. The information for the year 1397 includes the amounts related to railway, road and marine 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	115886	52953	583	47103	11286	136859996	3837	492
1394	116824	30175	295	47102	11367	127922931	4175	519
1395	125746	28967	279	51013	12283	148800952	4337	533
1396	116953	20773	184	48775	11245	139699699	4123	503
1397	127848	20886	196	52852	12383	150055704	4288	516
1398	139389	21135	206	48015	13526	161981863	4490	534
Motor spirit	602	67	0	15595	58	106007	5	1
Burning oil	1018	4884	0	1587	0	5299171	221	44
Gas oil	4137	12991	165	165	827	2331545	94	19
Fuel oil	562	2637	40	0	56	181436	7	1
Liquefied gas	1301	28	0	13010	0	5972569	95	9
Natural gas	131770	527	0	17657	12584	142485129	2540	254
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	591	0	//
Coal	000	000	000	000	000	40801	0	2

Source: Ministry of Energy.

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

Description	CO ₂	CH ₄	N ₂ O
1385	000	000	000
1390	12227299	263	34
1394	15049435	302	36
1395	15297163	322	40
1396	15965245	313	35
1397	17267316	325	35
1398	18894839	361	39
Gas oil	295217	12	2
Fuel oil	555145	22	4
Natural gas	11971973	213	21
Refinery gas	4894231	95	10
Liquefied gas	1178273	19	2

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
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
1398	740221	396566	3753	146859	30068	195118299	4183	603
<i>Ministry of Energy</i>								
Gas oil.....	39192	21383	561	1138	2330	7346267	267	53
Natural gas.....	185980	0	0	61576	5362	49108696	861	86
Fuel oil.....	40448	256413	1139	60406	4766	18542025	597	119
<i>Private sector</i>								
Gas oil.....	170028	79962	1898	3014	7876	24601133	902	180
Natural gas.....	279815	0	2	17759	8675	85436361	1393	139
Fuel oil.....	6571	38718	151	123	632	2431121	79	16
<i>large industries</i>								
Gas oil.....	40	89	1	10	6	16752	1	0
Natural gas.....	18148	0	0	2833	421	4372924	68	7
Coke gas ⁽¹⁾	000	000	000	000	000	129800	3	0
Blast furnace gas ⁽¹⁾	000	000	000	000	000	3133220	12	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 1398 (ton)

Description	NOX	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
Total	740221	396566	3753	146859	30068	195118299	4183	603
Ministry of Energy								
Thermal plant.....	143559	257348	1154	118518	7621	43962046	1052	166
Gas power plant.....	56229	11287	327	2250	2782	17966012	384	54
Combined cycle	65770	8977	216	2351	2043	13035820	287	39
Diesel power plant.....	61	184	3	0	12	33111	1	0
Private sector								
Thermal plant.....	45461	40106	178	11597	2076	15501962	306	40
Gas power plant.....	99844	39402	818	3503	6057	37246272	816	121
Combined cycle	311108	39172	1055	5797	9050	59720381	1252	175
large industries.....	18188	89	1	2843	427	7652696	83	8

Source: Ministry of Energy.

2.16. COVERAGE OF URBAN SEWAGE EXTENSION

Ostan	Year					
	1390		1395		1396	
	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	1154	290	1167	311
East Azarbayejan	57	12	60	12	61	14
West Azarbayejan	38	10	38	11	38	11
Ardebil	23	7	26	9	26	9
Esfahan	97	27	104	31	104	34
Alborz	17	4	19	10	19	10
Ilam	19	4	19	5	19	5
Bushehr	16	3	33	3	32	3
Tehran	41	7	41	8	45	18
Chaharmahal & Bakhtiyari	26	7	39	9	39	12
South Khorasan	19	1	24	1	24	1
Khorasan-e-Razavi	71	5	74	8	74	8
North Khorasan	18	2	21	2	21	3
Khuzestan	63	18	62	17	62	17
Zanjan	18	2	21	4	21	4
Semnan	17	5	19	6	19	6
Sistan & Baluchestan	36	2	37	4	37	4
Fars	79	6	83	8	82	8
Qazvin	26	9	26	9	26	9
Qom	2	1	6	1	6	1
Kordestan	23	19	24	18	27	18
Kerman	63	2	69	2	71	3
Kermanshah	27	27	28	27	28	26
Kohgiluyeh & Boyerahmad	12	2	15	3	16	3
Golestan	21	4	22	4	22	4
Gilan	48	33	50	35	50	36
Lorestan	23	7	24	7	24	7
Mazandaran	46	7	57	7	58	8
Markazi	29	7	32	8	33	8
Hormozgan	33	4	36	6	36	6
Hamedan	29	11	29	12	29	12
Yazd	18	2	16	3	18	3

2.16. COVERAGE OF URBAN WASTEWATER EXTENSION (continued)

Ostan	Year					
	1397		1398		1399	
	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	1172	325	1184	331	1248	339
East Azarbayejan.....	62	14	62	14	62	14
West Azarbayejan	38	11	39	12	39	12
Ardebil	26	9	26	9	26	9
Esfahan	104	38	104	38	110	39
Alborz.....	19	10	19	10	19	10
Ilam.....	19	6	19	6	19	6
Bushehr.....	32	3	35	3	39	3
Tehran	46	18	46	18	49	18
Chaharmahal & Bakhtiari.....	39	14	39	14	39	14
South Khorasan	25	1	25	1	30	1
Khorasan-e-Razavi	74	8	76	8	80	8
North Khorasan	21	3	22	4	24	4
Khuzestan	59	17	59	17	70	18
Zanjan.....	21	5	21	5	21	5
Semnan	19	6	19	6	21	7
Sistan & Baluchestan	37	4	37	4	38	4
Fars	83	8	84	9	84	10
Qazvin	26	9	26	9	26	9
Qom	6	1	6	2	6	2
Kordestan	27	21	27	23	27	24
Kerman	71	4	71	4	82	4
Kermanshah	31	28	31	28	30	28
Kohgiluyeh & Boyerahmad	16	3	16	3	16	3
Golestan.....	22	4	22	4	22	4
Gilan.....	50	36	50	36	52	36
Lorestan.....	24	7	25	7	30	7
Mazandaran.....	58	8	58	8	58	8
Markazi.....	33	8	33	8	33	8
Hormozgan	36	6	36	6	43	6
Hamedan.....	30	12	30	12	32	12
Yazd	18	3	21	3	21	6

Source: National Water and Wastewater Engineering Company.

2.17. NUMBER OF WASTEWATER-TREATMENT PLANTS

Ostan	Year						
	1385	1390	1395	1396	1397	1398	1399
Total country	90	137	182	203	223	237	240
East Azarbayejan	5	7	10	11	11	11	11
West Azarbayejan.....	4	7	9	10	12	14	13
Ardebil	3	3	4	4	6	6	6
Esfahan	16	21	25	27	27	32	28
Alborz	000 ⁽¹⁾	1	4	4	4	2	4
Ilam	3	4	5	5	6	6	6
Bushehr	2	3	3	3	3	3	3
Tehran	9 ⁽¹⁾	10	14	23	23	25	25
Chaharmahal & Bakhtiari.....	4	5	6	6	6	9	9
South Khorasan.....	1	1	1	1	1	2	1
Khorasan-e-Razavi	5	7	12	13	12	10	12
North Khorasan.....	1	2	2	2	4	6	3
Khuzestan	4	6	8	8	10	10	7
Zanjan	2	2	3	3	4	5	5
Semnan	2	3	5	5	5	3	7
Sistan & Baluchestan.....	1	2	2	3	3	2	3
Fars	2	2	4	4	6	7	8
Qazvin	3	4	6	6	6	5	6
Qom	1	2	3	3	3	2	3
Kordestan.....	1	3	5	6	6	8	9
Kerman	1	1	1	3	3	3	3
Kermanshah	5	7	7	7	8	9	9
Kohgiluyeh & Boyerahmad.....	1	1	3	3	5	6	5
Golestan	2	3	4	4	4	4	4
Gilan	1	2	4	4	4	4	9
Lorestan	2	4	4	4	6	6	4
Mazandaran.....	2	6	6	6	6	6	7
Markazi.....	4	9	11	11	12	12	11
Hormozgan	1	5	4	6	7	7	6
Hamedan.....	1	3	5	6	8	8	8
Yazd.....	1	1	2	2	2	4	3

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		1395		1396	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country.....	4247278	3896159	6491495	5863674	7166860	6528634
East Azarbayejan	393974	364045	610224	546310	672459	600836
West Azarbayejan.....	252191	238837	347996	330563	360751	342574
Ardebil	75527	70010	140493	128204	151045	139074
Esfahan	507722	461324	635946	571401	660696	591713
Alborz	24029	21211	93370	87475	102134	93623
Ilam.....	41812	38854	59690	54475	64347	58464
Bushehr.....	24602	24050	37306	35911	65245	60851
Tehran	325535	305403	937564	851533	974037	885054
Chaharmahal & Bakhtiyari.....	87155	81002	125196	113171	131691	118930
South Khorasan.....	27448	25866	47209	43723	51175	47338
Khorasan-e-Razavi	342256	285455	520606	430267	813870	752907
North Khorasan.....	33859	30227	51879	45617	54993	48391
Khuzestan	437089	391809	512951	460316	528087	473574
Zanjan	27402	25794	43068	40905	50302	47913
Semnan	26635	25582	51482	49105	56960	54308
Sistan & Baluchestan.....	33620	32867	51201	48754	54376	51727
Fars	173651	159830	232256	220127	251717	237895
Qazvin	103000	99541	169501	143341	174814	148041
Qom	34777	34196	78731	76004	87898	85518
Kordestan.....	218782	206899	302879	276111	333704	305060
Kerman	8238	7483	28780	26227	32233	29655
Kermanshah	293663	269395	333713	304079	340649	309038
Kohgiluyeh & Boyerahmad.....	15278	14475	34267	31555	40952	37434
Golestan.....	13460	12499	29996	27443	32067	29154
Gilan	219845	189115	262805	223533	271766	230341
Lorestan	141375	132592	213191	191169	223345	200623
Mazandaran.....	13040	12728	38321	37043	43919	40787
Markazi.....	114731	107539	159015	146528	166613	153897
Hormozgan	53388	48763	74554	64965	78435	68252
Hamedan.....	157244	154435	230677	223827	242702	234613
Yazd	25950	24333	36628	33992	53878	51049

2.18. CUSTOMERS OF URBAN SEWAGE (continued)

Ostan	Year					
	1397		1398		1399	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country	7601152	6935823	7927218	7219220	8258941	7516811
East Azarbayejan.....	722407	645976	765701	682829	804738	714240
West Azarbayejan	371659	352867	384837	365404	393559	373690
Ardebil	161610	147964	174441	158305	174441	158305
Esfahan	686772	614556	709892	633807	727540	648583
Alborz.....	116262	108969	123625	116258	130551	122928
Ilam	73209	66125	82128	76500	87828	80936
Bushehr	70791	65817	72967	67775	83006	79364
Tehran	1008299	930710	1025403	937729	1053790	959810
Chaharmahal & Bakhtiyari	140418	126913	146955	132984	153393	138924
South Khorasan	56600	52455	59873	55618	64464	59709
Khorasan-e-Razavi.....	891625	825028	947878	875849	998683	921937
North Khorasan	56765	49995	67608	60008	72598	64737
Khuzestan	542563	486029	553733	494573	563191	501276
Zanjan.....	66204	62365	71249	66852	74247	69295
Semnan.....	59724	56643	62302	59182	65326	61233
Sistan & Baluchestan	56893	54173	62132	59112	65097	61875
Fars	268772	253582	287719	269974	305658	286544
Qazvin	183859	156685	194421	180741	198409	184380
Qom	103097	100373	116977	113728	126994	123223
Kordestan	352552	322283	367226	333777	381360	345402
Kerman	35551	32788	39905	36940	43653	40246
Kermanshah	353217	320475	363579	328362	382747	341365
Kohgiluyeh & Boyerahmad	51480	47023	56368	51469	59738	54574
Golestan	33345	30173	34430	30935	35981	32129
Gilan.....	279544	235640	286965	238828	293959	243760
Lorestan.....	245190	217313	249924	218193	256719	237031
Mazandaran.....	47342	44403	49485	46255	50739	47385
Markazi	171734	158001	180527	165781	186603	170858
Hormozgan.....	80811	70010	82260	71075	86314	77066
Hamedan	253833	244986	263697	253015	274104	262609
Yazd	59024	55503	43011 ⁽¹⁾	37362 ⁽¹⁾	63511	53397

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

Ostan	Year						
	1385	1390	1395	1396	1397	1398	1399
Total country	27	37	47	49	51	52	52
East Azarbayejan.....	39	54	60	64	66	68	69
West Azarbayejan.....	41	56	63	64	65	67	67
Ardebil.....	27	41	49	51	53	55	55
Esfahan.....	43	58	64	66	67	67	67
Alborz.....	000 ^(c)	11	28	31	31	35	35
Ilam.....	29	38	49	51	54	57	58
Bushehr.....	19	23	25	27	23	30	29
Tehran.....	18 ⁽¹⁾	24	42	45	47	49	50
Chaharmahal & Bakhtiari.....	43	54	53	55	61	65	65
South Khorasan.....	21	28	30	37	33	33	34
Khorasan-e-Razavi.....	15	36	53	55	59	61	62
North Khorasan.....	21	28	34	31	32	38	38
Khuzestan.....	47	53	61	61	62	62	59
Zanjan.....	8	18	31	34	37	40	40
Semnan.....	11	14	23	24	28	31	30
Sistan & Baluchestan.....	8	12	19	23	24	24	22
Fars.....	11	24	35	39	40	44	47
Qazvin ⁽²⁾	41	55	62	63	71	66	66
Qom.....	14	20	34	30	34	38	41
Kordestan.....	75	97	92	95	96	96	95
Kerman.....	3	5	11	11	13	13	13
Kermanshah.....	52	64	86	87	87	87	71
Kohgiluyeh & Boyer-Ahmad.....	13	18	28	31	36	47	47
Golestan.....	6	10	16	16	16	17	17
Gilan.....	54	62	68	70	70	71	71
Lorestan.....	40	54	58	57	67	67	59
Mazandaran.....	3	6	11	12	16	17	17
Markazi.....	36	52	62	64	67	70	70
Hormozgan ⁽²⁾	28	34	51	56	58	52	51
Hamedan.....	44	60	71	72	74	75	75
Yazd ⁽³⁾	7	12	23	39	40	39	40

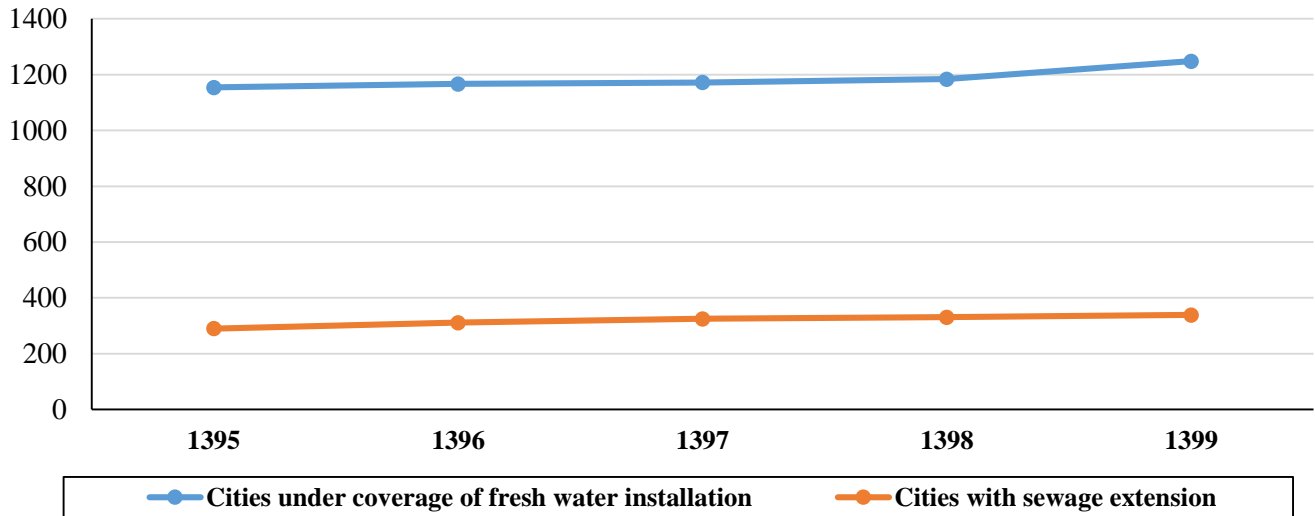
1. The statistics for Alborz are included with Tehran.

2. Revised figures.

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

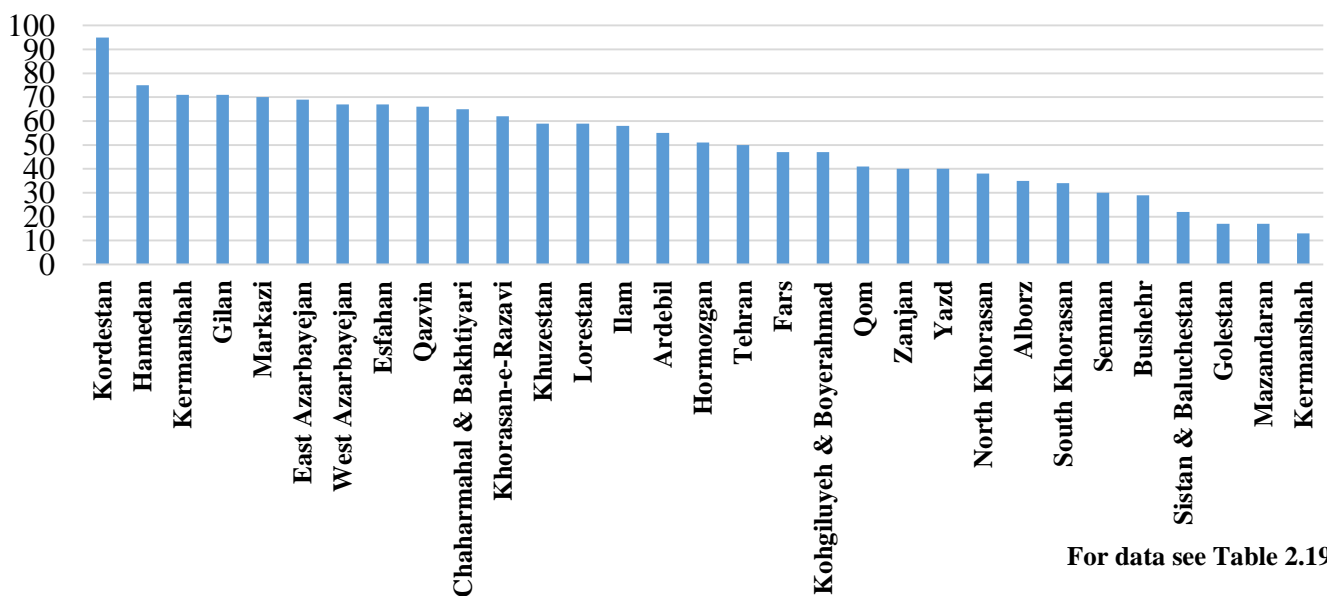
Source: National Water and Wastewater Engineering Company.

2.3. CITIES COVERED BY DRINKING WATER INSTALATIONS AND WITH WASTEWATER EXTENTION



For data see Table 2.16.

2.4. PROPORTION OF THE POPULATION COVERED BY URBAN WASTEWATER COLLECTION AND SANITARY DISPOSAL SERVICES, THE YEAR 1399



For data see Table 2.19.

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

Ostan	Year						
	1385	1390	1395	1396	1397	1398	1399
Total country	1938898	2863322	4401032	4891631	5264706	5680317	5720555
East Azarbayejan	88428	207648	274707	324332	336444	373880	381966
West Azarbayejan.....	121300	182430	243865	254373	257486	271293	291719
Ardebil	28640	47124	97418	76031	72158	79035	82514
Esfahan	390450	446526	482765	453791	475621	488087	521403
Alborz	000 ⁽¹⁾	26897	113241	128918	136717	152885	177543
Ilam.....	13400	21460	29848	33857	33938	39790	43726
Bushehr.....	17850	35262	44747	49457	59080	49013	32640
Tehran	495872 ⁽¹⁾	567088	801166	802295	1280781	1078377	1214047
Chaharmahal & Bakhtiari....	40256	45210	55256	58382	57566	64197	73255
South Khorasan.....	4060	8024	12895	15016	16522	17857	21029
Khorasan-e-Razavi	101370	159200	227268	281454	306287	289766	284638
North Khorasan.....	10890	15200	18827	19163	19512	22394	31035
Khuzestan	102090	130700	579329	810433	554873	758777	527483
Zanjan	3100	14230	31858	31527	38982	33750	42824
Semnan	900	6420	10905	11072	11986	12444	29394
Sistan & Baluchestan.....	8620	13150	17591	16727	18707	29823	30306
Fars	34112	129760	165658	178147	195671	324639	238898
Qazvin	22360	75240	97099	101141	104251	107471	122279
Qom	15620	53248	63022	63884	66084	67315	84136
Kordestan.....	51260	75246	192380	196412	206955	220195	247594
Kerman	1850	7122	17918	22331	25315	31745	33750
Kermanshah	126854	163580	234976	223230	260441	270957	250903
Kohgiluyeh & Boyerahmad ..	1230	2841	20822	23080	23652	23680	35922
Golestan.....	984	8500	24171	26646	30719	38601	40627
Gilan	81254	120461	176189	191066	194320	202049	218033
Lorestan	61258	88546	85471	159362	124096	231137	202328
Mazandaran.....	5200	14200	48041	44144	53135	56913	79830
Markazi.....	34560	72121	98914	115137	123488	129357	140097
Hormozgan	20150	40293	54616	71071	71041	95185	110119
Hamedan.....	49560	76541	60791	87743	91867	99149	108945
Yazd.....	5420	9054	19278	21409	17011	20557	21572

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		1395		1396	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country.....	42391	2390	55626	2982	59311	3145
East Azarbayejan	2420	22	3261	60	3469	86
West Azarbayejan.....	2278	58	2823	70	2969	77
Ardebil	933	32	1163	44	1196	45
Esfahan	5941	363	7461	414	7840	430
Alborz.....	508	26	858	34	918	34
Ilam.....	683	15	835	24	895	24
Bushehr.....	455	48	510	48	533	48
Tehran	4671	80	7186	268	8324	314
Chaharmahal & Bakhtiari....	886	73	1102	88	1193	92
South Khorasan.....	308	20	463	22	510	24
Khorasan-e-Razavi	2830	290	3995	309	4376	313
North Khorasan.....	274	18	395	26	450	28
Khuzestan	3798	435	5452	639	5530	649
Zanjan.....	363	10	452	14	468	15
Semnan	303	18	460	27	506	27
Sistan & Baluchestan.....	459	16	666	30	679	30
Fars	2043	181	2458	223	2697	243
Qazvin	1028	49	1263	53	1281	57
Qom	672	8	878	15	960	15
Kordestan.....	1453	122	1729	147	1751	148
Kerman	351	11	551	12	625	16
Kermanshah	2645	232	2718	112	2735	114
Kohgiluyeh & Boyerahmad...	235	30	292	21	341	21
Golestan.....	484	23	553	27	564	27
Gilan	644	45	691	53	669	56
Lorestan	1179	31	1474	35	1566	35
Mazandaran.....	593	18	868	20	881	21
Markazi.....	1345	31	1608	32	1673	39
Hormozgan	750	16	864	28	897	29
Hamedan.....	1233	49	1379	59	1452	59
Yazd.....	626	20	1218	28	1363	29

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

Ostan	Year					
	1397		1398		1399	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country	62156	3331	64506	3407	65841	3602
East Azarbayejan.....	3617	88	3768	88	3860	100
West Azarbayejan	3087	84	3166	85	3233	87
Ardebil	1293	48	1390	51	1426	53
Esfahan	8152	439	8393	471	8503	492
Alborz.....	986	36	1046	40	1115	45
Ilam	953	25	1054	26	1080	26
Bushehr	553	54	580	59	590	60
Tehran	8365	320	8574	358	8786	368
Chaharmahal & Bakhtiari	1238	94	1274	98	1310	104
South Khorasan	532	31	549	31	577	31
Khorasan-e-Razavi.....	4592	316	4664	220 ⁽¹⁾	4737	222
North Khorasan	480	28	514	26 ⁽¹⁾	545	27
Khuzestan	6025	756	6101	809	6182	859
Zanjan.....	501	16	523	16	531	16
Semnan.....	534	28	540	28	550	33
Sistan & Baluchestan	703	30	722	30	747	31
Fars	3005	257	3179	262	3275	268
Qazvin	1321	60	1338	65	1399	82
Qom	972	15	1003	16	1028	16
Kordestan	1776	150	2145	160	2170	163
Kerman	768	22	912	26	1285	36
Kermanshah	2811	115	2887	118	2959	122
Kohgiluyeh & Boyerahmad ...	431	21	492	21	506	21
Golestan	569	24	584	27	590	27
Gilan.....	735	57	756	59	845	68
Lorestan.....	1623	35	1752	35	1186	30
Mazandaran.....	927	23	960	23	960	22
Markazi	1697	39	1707	39	1723	41
Hormozgan.....	951	31	970	31	994	32
Hamedan	1526	60	1493 ⁽¹⁾	60	1537	70
Yazd.....	1429	29	1468	29	1611	49

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
1395	193	19	49
1396 ⁽²⁾	188	15	45
1397 ⁽²⁾	182	17	28
1398	189	12	30
1399	192	10	16
East Azarbayejan	10	2	0
West Azarbayejan	8	2	2
Ardebil	4	0	1
Esfahan	15	0	4
Alborz	3	0	0
Ilam	2	0	0
Bushehr	1	0	0
Tehran	9	0	0
Chaharmahal & Bakhtiari	3	0	0
South Khorasan	1	0	0
Khorasan-e-Razavi	8	0	1
North Khorasan	4	0	0
Khuzestan	11	0	2
Zanjan	5	0	1
Semnan	5	0	0
Sistan & Baluchestan	5	0	0
Fars	9	0	0
Qazvin	3	1	0
Qom	2	1	0
Kordestan	4	0	0
Kerman	8	0	0
Kermanshah	5	0	0
Kohgiluyeh & Boyerahmad	1	0	0
Golestan	11	0	0
Gilan	10	3	0
Lorestan	4	1	0
Mazandaran	15	0	3
Markazi	9	0	0
Hormozgan	3	0	0
Hamedan	9	0	2
Yazd	5	0	0

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
1395	7505
1396	7760
1397	7920
1398	8074
1399	8225
East Azarbayejan	334
West Azarbayejan	146
Ardebil	231
Esfahan	679
Alborz	140
Ilam	49
Bushehr	94
Tehran	870
Chaharmahal & Bakhtiari	288
South Khorasan	78
Khorasan-e-Razavi	905
North Khorasan	51
Khuzestan	244
Zanjan	172
Semnan	557
Sistan & Baluchestan	314
Fars	546
Qazvin	192
Qom	341
Kordestan	54
Kerman	435
Kermanshah	234
Kohgiluyeh & Boyerahmad	87
Golestan	150
Gilan	179
Lorestan	39
Mazandaran	161
Markazi	305
Hormozgan	53
Hamedan	97
Yazd	200

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

Source: Ministry of Industry, Mine and Trad