

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 goes beyond the set of natural, biological, and non-biological factors and also includes the interaction between humans and nature. Considering the fact that in the 21st century, environmental protection is one of the eight goals of 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 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 that countries face. The amount of pollution in some waters and its progressive trend is worrying. Groundwaters, lakes, and springs are the main sources of freshwater 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 the destruction and decrease of arable land capacity. Overall, soil erosion is a natural process that occurs due to 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, ultimately resulting in 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, as well as 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 now presented in the Environment Chapter due to its closer relationship with the environment sector since the year 1392. The reference for these statistics until the year 1400 was Agricultural Support Services Company and from the year 1401 is Ministry of Jihad-e- Agriculture (which is the aggregation of the statistics of Central Organization for Rural Cooperatives of Iran and Agricultural Support Services Company). 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 present distinguished samples of Iran's natural manifestations and are protected in order to provide sustainable preservation of its natural and diverse conditions and create a suitable environment for the reproduction and breeding of wildlife and the 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 have typical natural habitats and special ecological conditions for wildlife. These habitats are protected in order to preserve or rehabilitate them.

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

National natural heritages: They are specific and rare species of plants or animals 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.

Forest: This refers to an area of land, including both land and water, that is primarily covered with trees and shrubs, as well as other woody and herbaceous plants. It is important to note that a forest is defined as an area with a size of less than half a hectare and a natural tree coverage of at least five percent.

Ranges: They refer to land, whether it be a mountain, mountainside, or plain, that is covered with herbaceous or shrubby forage crops during the grazing season. According to the history of grazing, it is commonly known as a range. Fallow lands, even if they are covered with forage crops, are not recognized as a range. The canopy density is more than 50% in dense ranges, 25-50% in semi-dense ranges, and 5-25% in low-density ranges.

Desert phenomena: It includes salt deserts, sand dunes, sand sheets, clay plains, salt lands, lands with no vegetation, and exposed bedrock outcrops.

Afforestation It refers to the planting of various forest trees in order to restore and develop forests in national areas through proper technical and scientific methodologies

Forest park: It refers to a park whose major part is made up of trees and shrubs, and due to its favorable location, natural or man-made capabilities and capacities, it can be used by the public for recreational, environmental, protection, and tourism purposes.

Natural forest park: It refers to a forest park covered with trees and shrubs, along with other woody and herbaceous plants, which has a natural origin, and humans did not play a role in its initial creation.

Forest reserve: It refers to the forest areas that serve as the natural habitat for pure populations of forest species. These areas include endangered, rare, threatened, and other native species, listed in order of priority.

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

Swan timber(lumber): It is square-cut and cube-shaped wood with a length of 260 to 280 and with a cross section of 12×30 to 16×34 cm.

Pole wood: This refers to the wood from the trunk of a tree the chest-high diameter of which is between 8 and 30 centimetres.

Pitprop: This refers to a rounded piece of wood, almost two metres long, the median diameter of which is 6 to 20 centimetres and is almost 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 timber.

Lumber: This refers to wastes of articles of wood in different sizes and lengths.

Firewood: It refers to the surplus parts resulting

from exploitation and forestry operations, from which it is not possible to obtain any kind of dimensional wood, such as logs, etc.

Reserve: It is a land where seeds, cuttings, etc. of plants are densely planted in order to produce saplings or seedlings for transfer to the main land or transplanting.

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

Windbreak: It refers to living obstacles (such as several lines of trees, shrubs, or other vegetation) or artificial obstacles (like fences, walls, 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 orderly size.

Preservation: It is the selection and declaration of areas in regions with high erosion or sensitivity to erosion.

Delineation of rangelands: This refers to the operations aiming at delineation of range allotments.

Range allotments: This refers to the limits and boundaries of the ranges owned by ranchers.

Bushes planting: It is an operation carried out to improve and revitalize pastures that suffer from water shortage, where planting seeds in the main bed is not possible. In this operation, plant seedlings are cultivated in the field. This method can be done in natural beds (without changing the existing surface of the soil and cover) or in prepared beds (by making furrows or spaced holes). After filling the soil around the roots of the seedlings, irrigation will be done.

Pit-seeding: It is an operation carried out to improve the quality of the poor quality ranges by digging small holes and planting some seeds in these pastures in steep mountainous areas as well as in the areas with dry and semi-humid climates which have shallow and semi-deep soils but without high salinity and alkalinity, and medium

texture. In general, this method is done by hand and less machinery is utilized.

Fertilizer spraying: This involves spraying fertilizer on fields, gardens, forests, and pastures, and it can be done manually, using land machines and aircraft. Fertilizers are used in liquid or solid form.

Precipitation storage: It refers to mechanical operations that are applied in certain conditions of pastures to provide a suitable ground for the penetration of water resulting from rainfall into the soil. This additional moisture is used to strengthen the vegetation.

Trough: This refers to a metal, concrete, or polymer structure built to provide water to livestock in the pasture.

Shallow wells (Livestock well): This refers to a well dug to provide drinking water for livestock. The depth can be between 6 and 25 metres, depending on the depth of the underground water.

Windpump This is a structure that utilizes water from shallow wells and is installed in locations with a minimum wind speed of 3 meters per second.

Seed: Any part of a plant, such as seeds, cuttings, bulbs, tubercles and rootstocks, used for sexual and asexual reproduction and plant production.

Low-yield rainfed farms: They refer to those pastures that have been abandoned due to a lack of needed production yield resulting from over-exploitation, over-grazing in the vicinity of villages, or after conversion to rainfed agriculture. Usually, the necessary corrective measures are taken in these areas, such as establishing permanent vegetation in order to preserve the soil.

Chemical fertilizer: This refers to any type of chemical substance such as nitrogen, phosphorus, potash, magnesium, calcium, iron, zinc, copper, manganese etc.,. used to improve the quality of the soil and increase its fertility in terms of quality and quantity and to increase the yield of the product.

Poisons: This refers to any substance or mixture of substances needed to prevent, destroy, or control pests, unwanted plant or animal species that cause damage to the production or processing, storage, transportation, etc. of crops. Greenhouse gases: The vapor of H₂O, CO₂, NO₂, CH₄, O₃, HFCs, and

PFCs is called greenhouse gases. The share of two gases, H₂O and CO₂, accounts for about 90 percent of the total greenhouse gases.

Fuel oil: Fuel oil is a heavy fraction obtained from crude oil refining, which is liquid and has a high calorific value. Fuel oil is classified according to the range of distillation and viscosity and is primarily used for heat production in furnaces or power generation in ships.

Gas oil: It is one of the intermediate distillation products of the refinery, with a distillation range of 150 to 385 degrees Celsius. Its natural color is amber yellow. This product is used in heating systems and burners as a heat generator, as well as in internal combustion engines to generate power.

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

Urban sewage: This refers to the urban wastewater that is characterized as wastewater generated from domestic (household, public or business) activities. This kind of wastewater contains chemical pollutants which make its reuse problematic.

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 type of extension is installed in residential units for the regular consumption of drinking water or the disposal of household sewage. A residential unit is defined as a living space that includes at least one room, a kitchen, a toilet, and has either an independent entrance or an entrance leading to a common hallway, which must be recognized by the relevant company

Public network for the collection and transmission of sewage: It refers to all installations and equipment, such as main collectors, used for the collection and transmission of sewage to the 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: This refers to providing services such as sewage removal and disposal to the public network for the collection and transmission of sewage based on water consumption, capacity, and specifications determined and agreed upon 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 installations and 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.

Landscape: It refers to a landscape in which major part is covered with plants and has ecological or social utilities.

Selected information

In the year 1401, the area of zones protected by the Iran Department of Environment was about 18,969,265 hectares, of which the Ostans of Kerman with 2,364,554 hectares and Qom with 34,126 hectares had the highest and lowest areas, respectively. In this year, there were 936 conflagrations in the forests and ranges, which shows a fall of 75 percent in comparison with the previous year.

In the year 1400, among the pollutants and greenhouse gases resulting from the burning of fuels in the transportation sector, CO₂ accounted for 157,390,934 tons, which is 92.3% of the total pollutants and greenhouse gases emitted in this sector. It should be noted that the majority of CO₂ production is attributed to the burning of gasoline, while the least amount is attributed to liquefied gas. Fifty-four percent of the country's population was covered by the network for collection and transmission services of urban sewage in the year 1401. The Ostan of Kordestan had the highest percentage of population covered by this network, with 97 percent, while the Ostan of Kerman had the lowest percentage, with 15 percent.

In the year 1401, the average volume of collected wastewater was 6,243,757 cubic meters, which shows a 6.3 percent rise compared to the year 1400. The Ostans of Tehran and Khuzestan, with 21 percent and 13 percent respectively, had the most collected wastewater volume. On the other hand, the Ostans of South Khorasan, Sistan & Baluchestan, and North Khorasan had the lowest volumes, each accounting for less than 0.5 percent of the total nation's wastewater.

2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1401 (hectare)

Ostan	Total		National park		Wildlife habitat	
	Number	Area	Number	Area	Number	Area
Total country.....	309	18969265	32	2075115	56	6466132
East Azarbayejan.....	13	585143	2	16048	1	90752
West zarbayejan.....	8	667000	1 ⁽¹⁾	543829	2	5767
Ardebil	5	171604	0	0	0	0
Esfahan.....	14	1574246	3	113911	6	1157512
Alborz	2	407059	0	0	0	0
Ilam	6	136447	0	0	0	0
Bushehr	8	181811	2	68649	1	2087
Tehran	11	475257	3	55177	0	0
Chaharmahal & Bakhtiyari .	7	193184	1	4365	1	44448
South Khorasan	10	1991840	0	0	3	1575255
Khorasan-e-Razavi.....	28	1032874	1	35585	3	90301
North Khorasan	11	196054	3	30632	1	69358
Khuzestan.....	15	709723	2	11558	2	331041
Zanjan	4	299204	0	0	1	29829
Semnan.....	9	2150831	3	549948	2	460876
Sistan & Baluchestan	9	982920	0	0	1	292637
Fars.....	13	1214352	3	244976	2	187685
Qazvin	3	115838	0	0	0	0
Qom.....	1	34126	0	0	0	0
Kordestan	8	261615	0	0	1	3291
Kerman.....	17	2364554	1	152711	4	1431557
Kermanshah	9	233113	0	0	3	84672
Kohgiluyeh& Boyerahmad .	8	210091	1	25820	0	0
Golestan	5	183219	1	91307	0	0
Gilan	15	132821	1	3444	5	4191
Lorestan.....	7	320713	0	0	2	25650
Mazandaran.....	22	228465	2	36979	5	84250
Markazi	7	160566	1	12147	2	27866
Hormozgan.....	17	704249	0	0	3	10521
Hamedan	6	62198	0	0	0	0
Yazd	11	988145	1	78029	5	456586

2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1401 (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.....	2 ⁽²⁾	407059	0	0
Ilam	4	134923	2	1524
Bushehr	3	103769	2	7306
Tehran	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	86
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	0
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	12	101706	3	5530
Markazi	3	120549	1	4
Hormozgan.....	13	691772	1	1956
Hamedan	6	62198	0	0
Yazd	4	453528	1	2

1. Orumiye Lake National Park is located in two Ostans, East Azarbayejan and West Azarbayejan. Because the greatest area of this park is in the protected zones of West Azarbayejan, the cited Ostan is in charge of this park and has been recorded in this Ostan.

2. The Central Alborz Protected Area is located in three Ostans: Tehran, Alborz, and Mazandaran, and the largest area of this protected region is located in Alborz and has been recorded in this Ostan.

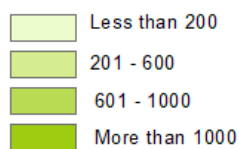
Source: Iran Department of Environment.

2.1. AREA OF ZONS PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT 1401



1000 HECTARES

For Data See Table 2.1.



2.2. AREA OF FORESTS, RANGES AND DESERTS BY OSTAN, THE YEAR 1401 (hectare)

Ostan	Forests ⁽¹⁾	Ranges				Desert phenomena
		Total	Good (dense)	Fair (semi-dense)	Poor (low dense)	
Total country	17649890	83309167	5421990	20930847	56956329	29043513
East Azarbayejan	172562	2340176	843974	1152036	344166	265229
West zarbayerjan.....	80047	2218544	733316	1123041	362187	41452
Ardebil	49491	819342	360873	435698	22771	661
Esfahan	557071	6412581	121163	802626	5488792	2341232
Alborz	20035	340590	132667	150970	56953	13296
Ilam	666931	994297	29293	473158	491846	5626
Bushehr	320769	1189695	9314	233674	946707	102305
Tehran	61804	796090	151277	388437	256376	74304
Chaharmahal & Bakhtiyari ...	398699	851262	178624	454502	218136	3081
South Khorasan.....	1336087	7684476	6057	521290	7157129	5116233
Khorasan-e-Razavi	759679	6709732	142304	2101545	4465883	482302
North Khorasan.....	371151	1679224	78707	1013628	586889	13022
Khuzestan	913899	2415110	128901	1254697	1031512	275443
Zanjan	60402	980250	231214	512710	236326	10761
Semnan	381881	4211586	51722	805605	3354259	4594366
Sistan & Baluchestan	1441975	10899960	10298	580126	10309536	4609273
Fars	2775657	6647427	139805	1758219	4749403	210874
Qazvin.....	43051	735965	168126	438681	129158	19348
Qom.....	23103	728518	13356	154506	560656	201939
Kordestan.....	256794	1182214	356971	724146	101097	1327
Kerman	914651	8674611	61856	1507134	7105621	6892774
Kermanshah	646514	856859	86466	435331	335062	4342
Kohgiluyeh & Boyerahmad..	867745	499867	82665	294414	122788	4741
Golestan	504787	651268	126071	399976	125221	872
Gilan.....	688413	226013	121134	97816	7063	1601
Lorestan.....	1112475	864557	140411	643613	80533	7160
Mazandaran.....	1148810	587568	354317	205714	27537	6783
Markazi	35250	1608955	327559	1016798	264598	13353
Hormozgan	797488	4566282	13894	528228	4024160	1226704
Hamedan.....	16056	580204	207178	309518	63508	12311
Yazd.....	226614	4355944	12477	413012	3930455	2490797

1. Including the areas of groves and shrubberies.

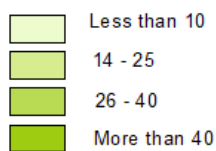
Source: Forests, Range and Watershed Management Organization.

2.2. RATIO OF FORESTS AREA TO THE AREA OF THE OSTANS, THE YEAR 1401



For Data See Table 2.2 and 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
1385	1237	611	626	11132	2752	8380
1390	1324	447	877	36972	23656	13316
1395	2298	905	1393	21512	8712	12800
1397	1780	1179	601	9595	5869	3726
1398	1312	814	498	4746	2649	2097
1399	2541	1093	1448	20941	5146	15795
1400	3683	1561	2122	47659	21567	26092
1401	936	780	156	2744	2230	514

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)
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
1397	21.68	//	18.89	10.84	//
1398 ⁽¹⁾	0.00	0.00	0.00	0.00	0.00
1399 ^(1,2)	0.00	0.00	0.00	11.17	//
1400 ⁽¹⁾	0.00	0.00	0.00	0.00	0.00
1401^(1,2)	35.47	//	33.33	48.18	0.00

1. Because of the implementation of the "Forest Rest" project, no wood products were produced.

2. The aforementioned figures have been in compliance with the provisions of part (f) of article 38 of the Sixth National Development Plan and reflect the results of the survey on wood cultivation, hand-planted forests, public and development projects, trees affected by floods, and other instances of necessary harvesting in the 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)
1385.....	32.0	7349	31056	27724	230
1390.....	13.0	2569	8212	4748	72
1395.....	7.2	536	11443	764	29
1397.....	13.6	532	14434	700	38
1398.....	1.7	96	40366	582	265
1399.....	0.0	103	6214 ⁽²⁾	509	0
1400.....	7.3	468	3870 ⁽²⁾	250	14
1401.....	3.2	923	4763	70	37
East Azarbayejan.....	0	0	0	0	0
West Azarbayejan.	0	0	50	0	0
Esfahan	0	0	156	0	0
Alborz	0	30	35	0	0
Ilam	0	0	30	0	0
Bushehr	0	456	0	0	0
Tehran	0	0	558	0	0
South Khorasan	0	21	0	0	0
Khorasan-e-Razavi.....	3.0	284	1985	0	37
North Khorasan	0	0	380	0	0
Khuzestan	0	132	0	0	0
Semnan	0	0	630	70	0
Sistan & Baluchestan	0.2	0	0	0	0
Fars	0	0	0	0	0
Qazvin.....	0	0	0	0	0
Qom.....	0	0	100	0	0
Kerman	0	0	80	0	0
Golestan	0	0	460	0	0
Mazandaran.....	0	0	50	0	0
Markazi.	0	0	190	0	0
Hormozgan	0	0	50	0	0
Hamadan	0	0	0	0	0
Yazd	0	0	10	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)
1385.....	4452	42	1087	816831	254
1390.....	0	23	518	408404	8000
1395.....	7	318	808	693816	25
1397.....	10622	0	465	457218	0
1398.....	879157	125	3798	879157	38
1399.....	644	542	2439	307370	92
1400.....	758	76	1446	625218	36
1401.....	0	53	2335	342488	230
East Azarbayegan.....	0	0	0	23000	0
West Azarbayegan	0	0	0	11000	0
Esfahan	0	45	0	4880	0
Alborz	0	0	0	6000	0
Ilam	0	0	240	1000	0
Bushehr.	0	0	0	0	0
Tehran	0	0	0	0	0
South Khorasan.....	0	0	0	1640	0
Khorasan-e-Razavi.....	0	3	0	239910	200
North Khorasan.....	0	0	0	0	10
Khuzestan	0	0	0	0	0
Semnan	0	0	366	7830	10
Sistan & Baluchestan	0	0	190	1640	0
Fars	0	0	0	4880	0
Qazvin.....	0	0	90	0	0
Qom.....	0	0	0	6778	0
Kerman	0	0	1311	12050	10
Golestan	0	0	0	0	0
Mazandaran.....	0	0	0	0	0
Markazi.	0	5	0	17000	0
Hormozgan	0	0	123	0	0
Hamadan	0	0	15	0	0
Yazd	0	0	0	4880	0

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

2. Revised figures.

Source: Forests, Range and Watershed Management Organization.

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

Description	Unit	Year							
		1385	1390	1395	1397	1398	1399	1400	1401
<i>Range management</i>									
Cadastral survey, delineation and control of grazing permits	ha	3992534	2438886	1112538	342707	1373121	5652207	2617121	1458424
Preparation of range management plans	ha	1530820	461537	16071	324564	479169	5473457	2711466	1547974
Range and livestock grazing management in range allotments	ha	59727941	25731913	4562157	6416047	1381888	18336820	15618117	22391312
<i>Rehabilitation and restoration of rangelands</i>									
Transplanting seedling.....	ha	0	1137	788	2968	2512	2380	823	358
Saplings	1000	4098	403263	299	1152	1743	1756	427	77
Direct seeding and hoeing ..	ha	48975	18749	4617	46584	40412	42607	30661	22591
Fertilizer spreading on rangelands.....	ha	29143	8637	255	10670	8977	2590	461	181
Water harvesting.....	ha	42143	42495	6223	4751	4977	5490	5059	2607
Providing water troughs.....	set	2105	1182	269	1213	2158	591	423	955
Drilling shallow wells.....	case	90	57	6	2	28	0	0	0
Installation of wind pumps .	set	18	29	4	0	0	0	0	5
Seed production	ton	390	1839	131	396	72	76	66	26
Restoration of pastures on degraded marginal lands.....	ha	11701	3716	2057	3844	3947	2717	1032	1820

Source: Forests, Range and Watershed Management Organization.

2.7. AMOUNT OF FERTILIZERS DISTRIBUTED BY TYPE⁽¹⁾ (ton)

Year and Ostan	Total	Urée	Diammonium phosphate	Ammonium nitrate	Ammonium sulfate	TSP
1390.....	2488308	1639560	378923	1493	4570	0
1395.....	2784345	1990836	397437	13345	6353	0
1397.....	3122396	2291407	381465	4937	13213	90724
1398.....	3253011	2353376	338233	5973	12521	115304
1399.....	3327655	2826264	65747	1964	16185	18935
1400.....	3405584	2982787	176535	5792	8884	30948
1401.....	3919693	3103277	342557	1792	7313	109507
East Azarbayejan.....	148751	124585	13379	0	158	5187
West Azarbayejan	125141	96542	11238	0	0	3865
Ardebil	115239	96105	13685	0	10	1038
Esfahan.....	186103	135942	6913	462	1977	4869
Alborz	21196	13603	2234	0	0	196
Ilam	61020	45225	5089	0	0	2286
Bushehr	46341	35772	3347	0	0	871
Tehran	89687	67537	5014	35	0	5880
Chaharmahal & Bakhtiari	38495	31794	4437	0	0	675
South Khorasn.....	37477	27681	3379	7	0	1344
Khorasan-e-Razavi.....	312334	254180	24320	0	112	13483
North Khorasn.....	81246	62831	8946	55	0	3414
Khuzestan.....	498822	400128	52709	0	0	11625
Zanjan	97408	82913	8704	0	52	2745
Semnan.....	51393	34444	5345	1000	100	1000
Sistan & Baluchestan	40070	34631	3812	0	0	421
Fars.....	357404	312624	27460	0	0	4670
Qazvin	114129	91214	13362	0	0	3830
Qom.....	38231	25558	4845	8	286	1560
Kordestan	132600	117048	10301	0	0	1714
Kerman.....	157434	113187	11583	10	700	10000
Kermanshah.....	147002	122662	11280	0	1900	3000
Kohgiluyeh & Boyerahmad ...	33196	29915	2438	0	0	0
Golestan	254431	168353	29273	0	27	11625
Gilan.....	83333	57709	6805	0	17	2268
LoRESTAN.....	101418	86639	10236	0	25	703
Mazandaran	190486	143208	13411	15	1582	3747
Markazi	123042	96944	8900	0	200	1700
Hormozgan.....	23743	20377	2010	0	15	0
Hamedan	177266	147420	14995	200	140	4300
Yazd	35255	26506	3107	0	12	1491

2.7. AMOUNT OF FERTILIZERS DISTRIBUTED BY TYPE⁽¹⁾ (continued) (ton)

Year and Ostan	Potassium sulfate	Potassium chloride	Others
1390.....	78391	2465	382906
1395.....	148428	5549	222397
1397.....	191508	4606	144536
1398.....	231882	20605	175117
1399.....	63231	4847	330482
1400.....	113584	3740	83314
1401.....	177817	18509	158921
East Azarbayejan.....	3318	292	1832
West Azarbayejan	4126	112	9258
Ardebil	3676	38	687
Esfahan.....	4757	244	30939
Alborz	1492	3	3668
Ilam	3303	387	4730
Bushehr	1863	34	4454
Tehran	7313	199	3709
Chaharmahal & Bakhtiyari	1589	0	0
South Khorasn.....	1799	147	3120
Khorasan-e-Razavi.....	11154	1818	7267
North Khorasn.....	3748	643	1609
Khuzestan.....	26059	4099	4202
Zanjan	2303	152	539
Semnan.....	3104	500	5900
Sistan & Baluchestan	1151	0	55
Fars.....	8532	0	4118
Qazvin	2680	144	2899
Qom.....	3279	165	2530
Kordestan	3216	56	265
Kerman.....	6652	575	14727
Kermanshah.....	4060	0	4100
Kohgiluyeh & Boyerahmad	843	0	0
Golestan	26619	4624	13910
Gilan.....	11807	1296	3431
Lorestan.....	3451	105	259
Mazandaran	11209	1557	15757
Markazi	4570	320	10408
Hormozgan.....	828	90	423
Hamedan	5832	578	3801
Yazd	3484	331	324

1. The increase in the statistics compared to previous years is due to the change in the data sources.

Source: Agricultural Support Services Company.

2.8. PESTICIDES SOLD BY TYPE⁽¹⁾**(ton)**

Year	Total	Insecticides	Acaricides	Fungicides	Herbicides	Granule and oil ⁽²⁾	Others
1390	5864428	870047	78360	357810	1456291	2003548	1098372
1395	4037355	653719	262374	428793	570333	907670	1214466
1397	4425714	456354	85628	271157	1040017	1544716	1027842
1398 ⁽³⁾	3302313	990911	105894	434595	1202060	156912	411941
1399	3346355	676168	97781	452453	593540	64883	1461530
1400	3027926	1038212	81518	280881	498338	316135	812842
1401	3333179	748045	177616	316141	516483	471060	1103834

1. The increase in the statistics compared to previous years is due to the change in the data sources.

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

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	121164	87244	956	71176	12576	125869250	0	0
1390	61058	62828	382	14168	26673	12376837	643	4148
1395	50330	51781	317	11092	22000	13167168	575	3425
1396	46247	47614	292	10214	20211	12968233	544	3148
1397	50237	51760	318	11038	21952	14526083	598	3420
1398 ⁽¹⁾	54166	55871	344	11899	23664	16687521	663	3688
1399	54717	56183	343	12006	23929	17638519	683	3732
1400	53748	55172	337	11807	23507	19229802	705	3669
Motor spirit	2	0	0	50	0	343	0	//
Burning oil	3	13	0	4	0	13999	1	0
Gas oil	53724	55067	336	11752	23504	9461141	530	3652
Fuel oil	19	91	1	//	2	6271	0	//
Natural gas	000	000	000	000	000	9748048	174	17

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	0	0
1390	157930	187519	2769	24379	16237	89148113	1954	262
1395	160549	88131	1240	19029	16412	97977471	1973	240
1396	167203	92603	1300	20546	17132	102177822	2063	251
1397	176731	90622	1259	21617	18122	108585069	2185	265
1398	191747	106214	1491	20924	19529	118025336	2374	290
1399 ⁽¹⁾	205928	102110	1427	22049	20812	127814061	2541	305
1400	222113	131220	1860	24190	22563	136387068	2736	334
Motor sprit	615	68	0	15957	59	108464	5	1
Burning oil	52	248	0	80	0	268547	11	2
Gas oil	16739	52560	670	670	5022	9433001	382	76
Fuel oil	16610	77959	1191	6	1661	5363606	208	42
Liquefied gas	0	//	000	6	0	14763	0	//
Natural gas	188097	385	0	7471	15821	118804533	2118	212
Coke gas	000	000	000	000	000	149537	3	0
Blast furnace gas	000	000	000	000	000	2244617	9	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	877374	415103	4629	7794379	311351	127119583	42746	5841
1395	905600	404716	4446	9704801	295073	138780819	51893	6239
1396	956894	392896	4154	10444841	311865	144625082	54494	6658
1397	1018741	410550	4310	11512262	326012	153886312	57861	7141
1398	1027478	414588	4355	11599000	328965	155032773	58130	7200
1399	933188 ⁽¹⁾	391358	4170	9804227 ⁽¹⁾	309925	141542078	53558	6506
1400	1035790	425677	4502	11284535	337912	157390934	59847	7224
Motor sprit	428563	47618	0	11110880	41269	75524661	35964	3487
Gas oil	569719	354492	4220	151925	278529	59455174	3134	3568
Liquefied gas	000	000	000	000	000	4324	6	0
Natural gas	000	000	000	000	000	18746396	20718	67
Fuel oil	114	534	8	//	11	36706	000	000
Jet fuel (JP4)	458	51	0	11881	44	81209	1	2
Jet oil fuel (ATK).	36937	22983	274	9850	18058	3542464	25	99
<i>Road and marine transportation</i>								
1385	813084	326264	3433	9466815	254052	107402790	0	0
1390	830800	386634	4291	7756310	288974	122496090	42667	5367
1395	845259	367574	4005	9668477	265883	132833310	51792	5636
1396	892477	353122	3681	10412238	280609	138293380	54385	6010
1397	960249	374447	3881	11481995	297640	148120957	57754	6490
1398	971664	380189	3946	11567553	301931	149519202	58025	6560
1399	894829	367830	3891	9776958	291432	137712012	53471	5960
1400	985780	394797	4135	11259264	313645	152451402	59748	6614
Motor sprit	428556	47617	0	11110701	41268	75524661	35964	3487
Gas oil	557110	346646	4127	148563	272365	58139315	3060	3060
Liquefied gas	000	000	000	000	000	4324	6	0
Natural gas	000	000	000	000	000	18746396	20718	67
Fuel oil	114	534	8	0	11	36706	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
1395	11664	7258	86	3110	5702	1217240	68	470
1396	12609	7846	93	3362	6164	1315859	74	508
1397	13110	8157	97	3496	6409	1368161	77	528
1398	12999	8088	96	3466	6355	1356583	76	524
1399	11745	7308	87	3132	5742	1225693	69	473
1400	12609	7846	93	3362	6164	1315859	74	508
Gas oil.....	12609	7846	93	3362	6164	1315859	74	508
<i>Air transportation</i>								
1385	32561	19565	231	43565	15385	3293955	0	0
1390	37341	22724	269	35607	17863	3659817	26	102
1395	48677	29885	355	33214	23488	4730269	33	132
1396	51808	31929	379	29241	25092	5015843	35	140
1397	45382	27946	332	26771	21962	4397194	31	123
1398	42815	26311	312	27980	20678	4156989	29	116
1399	26614 ⁽¹⁾	16221	192	24137 ⁽¹⁾	12751	2604373	18	73
1400	37402	23035	274	21909	18103	3623673	26	101
Jet fuel (JP4).....	458	51	0	11881	44	81209	1	2
Jet oil fuel (ATK)	36937	22983	274	9850	18058	3542464	25	99
Motor spirit.....	7	1	0	179	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	0	0
1390	115886	52953	583	47103	11286	136859996	3837	492
1395	125657	28833	277	50552	12275	148566005	4332	533
1396	118661	26279	254	48391	11595	140479716	4160	511
1397	129035	24748	245	52463	12629	150547865	4313	521
1398	139347	21134	206	47593	13526	161788322	4487	534
1399	146501	20515	210	56032	14210	162936910	3161	350
1400	145621	17508	175	53381	14047	162454507	3133	344
Motor spirit	826	92	0	21414	80	145559	6	1
Burning oil	782	3754	0	1220	0	4073212	170	34
Gas oil	3116	9784	125	125	623	1756012	71	14
Fuel oil	702	3296	50	0	70	226744	9	2
Liquefied gas	1200	26	0	11997	0	5507715	87	9
Natural gas	138995	556	0	18625	13274	150297583	2679	268
Animal waste	000	000	000	000	000	20366	6	1
Bush and thorn	000	000	000	000	000	10871	3	0
Firewood	000	000	000	000	000	374915	100	13
Charcoal	000	000	000	000	000	727	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⁽¹⁾ (ton)

Description	NO _x	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
1390	000	000	000	000	000	12227299	263	34
1395	000	000	000	000	000	15911770	333	41
1396	000	000	000	000	000	16643627	326	37
1397	000	000	000	000	000	17967579	338	36
1398	000	000	000	000	000	19737210	377	41
1399	000	000	000	000	000	19379584	363	38
1400	000	000	000	000	000	20192637	379	40
Gas oil.....	000	000	000	000	000	74810	3	1
Fuel oil.....	000	000	000	000	000	421985	16	3
Natural gas.....	000	000	000	000	000	12094922	216	22
Refinery gas.....	000	000	000	000	000	6520621	127	13
Liquefied gas	000	000	000	000	000	1080300	17	2

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
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
1399 ⁽¹⁾	764118	418298	3855	142512	32195	213110524	4509	641
1400	803259	470686	4018	136259	34297	230171916	4824	681
Ministry of Energy								
Gas oil.....	36931	20952	524	1051	2176	6850759	249	50
Natural gas.....	181787	0	0	69180	5603	50677959	900	90
Fuel oil.....	51352	302269	1338	40324	5598	20794157	701	140
Private sector								
Gas oil.....	166214	77529	1871	3152	7763	24574610	889	178
Natural gas.....	334514	0	5	19741	11529	115066908	1852	185
Fuel oil.....	13192	69936	280	206	1172	4430809	147	29
large industries								
Gas oil.....	0	1	//	//	//	0	//	//
Natural gas.....	19269	0	0	2605	455	4945176	73	7
Coke gas ⁽²⁾	000	000	000	000	000	130392	3	0
Blast furnace gas ⁽²⁾	000	000	000	000	000	2701147	10	1

1. Revised figures.

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 1400

(ton)								
Description	NOX	SO ₂	SO ₃	CO	SPM	CO ₂	CH ₄	N ₂ O
Total.....	803259	470686	4018	136259	34297	230171916	4824	681
Ministry of Energy								
Thermal plant.....	137450	303119	1351	105300	8254	43906386	1125	183
Gas power plant	59863	10425	285	2744	2879	19464439	408	54
Combined cycle	72700	9506	223	2511	2235	14921397	316	42
Diesel power plant	57	171	3	//	11	30652	1	0
Private sector								
Thermal plant.....	49276	70736	299	12727	2582	17368454	370	52
Gas power plant	72957	20436	419	2553	5152	37802212	747	95
Combined cycle	391687	56292	1437	7819	12731	88901661	1770	245
large industries.....	19269	1	//	2605	455	7776715	86	9

Source: Ministry of Energy.

2.16. NUMBER OF CITIES WITH DRINKING WATER INSTALLATIONS

Ostan	Year						
	1390	1395	1397	1398	1399	1400	1401
Total country.....	1055	1154	1172	1184	1248	1333	1366
East Azarbayejan.....	57	60	62	62	62	66	66
West Azarbayejan.....	38	38	38	39	39	47	47
Ardebil	23	26	26	26	26	26	31
Esfahan	97	104	104	104	110	112	112
Alborz	17	19	19	19	19	19	19
Ilam.....	19	19	19	19	19	19	19
Bushehr.....	16	33	32	35	39	39	40
Tehran	41	41	46	46	49	49	50
Chaharmahal & Bakhtiari.....	26	39	39	39	39	43	43
South Khorasan.....	19	24	25	25	30	30	30
Khorasan-e-Razavi	71	74	74	76	80	84	94
North Khorasan.....	18	21	21	22	24	24	24
Khuzestan	63	62	59	59	70	65	79
Zanjan.....	18	21	21	21	21	21	21
Semnan	17	19	19	19	21	21	21
Sistan & Baluchestan.....	36	37	37	37	38	55	55
Fars	79	83	83	84	84	113	109
Qazvin	26	26	26	26	26	29	29
Qom	2	6	6	6	6	6	6
Kordestan.....	23	24	27	27	27	33	33
Kerman	63	69	71	71	82	82	84
Kermanshah	27	28	31	31	30	35	37
Kohgiluyeh & Boyerahmad.....	12	15	16	16	16	16	16
Golestan.....	21	22	22	22	22	22	22
Gilan	48	50	50	50	52	52	52
Lorestan	23	24	24	25	30	30	32
Mazandaran	46	57	58	58	58	58	58
Markazi.....	29	32	33	33	33	34	34
Hormozgan	33	36	36	36	43	47	47
Hamedan.....	29	29	30	30	32	32	32
Yazd	18	16	18	21	21	24	24

Source: National Water and Wastewater Engineering Company.

2.17. NUMBER OF CITIES WITH WASTEWATER INSTALATIONS

Ostan	Year						
	1390	1395	1397	1398	1399	1400	1401
Total country.....	257	290	325	331	339	347	352
East Azarbayejan.....	12	12	14	14	14	14	14
West Azarbayejan.....	10	11	11	12	12	12	12
Ardebil	7	9	9	9	9	10	10
Esfahan	27	31	38	38	39	40	44
Alborz	4	10	10	10	10	10	10
Ilam.....	4	5	6	6	6	6	6
Bushehr.....	3	3	3	3	3	3	3
Tehran	7	8	18	18	18	18	18
Chaharmahal & Bakhtiari.....	7	9	14	14	14	15	15
South Khorasan.....	1	1	1	1	1	2	2
Khorasan-e-Razavi	5	8	8	8	8	7	8
North Khorasan.....	2	2	3	4	4	4	4
Khuzestan	18	17	17	17	18	17	17
Zanjan.....	2	4	5	5	5	7	7
Semnan	5	6	6	6	7	6	6
Sistan & Baluchestan.....	2	4	4	4	4	4	4
Fars	6	8	8	9	10	11	11
Qazvin	9	9	9	9	9	10	10
Qom	1	1	1	2	2	2	2
Kordestan.....	19	18	21	23	24	26	26
Kerman	2	2	4	4	4	5	5
Kermanshah	27	27	28	28	28	28	28
Kohgiluyeh & Boyerahmad.....	2	3	3	3	3	4	4
Golestan.....	4	4	4	4	4	4	4
Gilan	33	35	36	36	36	36	36
Lorestan	7	7	7	7	7	7	7
Mazandaran	7	7	8	8	8	8	8
Markazi.....	7	8	8	8	8	8	8
Hormozgan	4	6	6	6	6	6	6
Hamedan.....	11	12	12	12	12	12	12
Yazd	2	3	3	3	6	5	5

Source: National Water and Wastewater Engineering Company.

2.18. NUMBER OF WASTEWATER-TREATMENT PLANTS

Ostan	Year							
	1385	1390	1395	1397	1398	1399	1400	1401
Total country.....	90	137	182	223	237	240	246	252
East Azarbayejan.....	5	7	10	11	11	11	11	11
West Azarbayejan.....	4	7	9	12	14	13	13	13
Ardebil	3	3	4	6	6	6	6	7
Esfahan	16	21	25	27	32	28	29	29
Alborz	000 ⁽¹⁾	1	4	4	2	4	4	4
Ilam.....	3	4	5	6	6	6	6	6
Bushehr.....	2	3	3	3	3	3	3	3
Tehran	9 ⁽¹⁾	10	14	23	25	25	25	25
Chaharmahal & Bakhtiari.....	4	5	6	6	9	9	10	11
South Khorasan.....	1	1	1	1	2	1	1	2
Khorasan-e-Razavi	5	7	12	12	10	12	12	12
North Khorasan.....	1	2	2	4	6	3	3	3
Khuzestan	4	6	8	10	10	7	8	8
Zanjan.....	2	2	3	4	5	5	6	6
Semnan	2	3	5	5	3	7	7	8
Sistan & Baluchestan.....	1	2	2	3	2	3	4	4
Fars	2	2	4	6	7	8	8	9
Qazvin	3	4	6	6	5	6	6	6
Qom	1	2	3	3	2	3	3	3
Kordestan.....	1	3	5	6	8	9	9	9
Kerman	1	1	1	3	3	3	3	3
Kermanshah	5	7	7	8	9	9	9	9
Kohgiluyeh & Boyerahmad.....	1	1	3	5	6	5	5	5
Golestan.....	2	3	4	4	4	4	4	4
Gilan	1	2	4	4	4	9	9	9
Lorestan	2	4	4	6	6	4	4	4
Mazandaran	2	6	6	6	6	7	8	8
Markazi.....	4	9	11	12	12	11	11	11
Hormozgan	1	5	4	7	7	6	6	6
Hamedan.....	1	3	5	8	8	8	9	9
Yazd.....	1	1	2	2	4	3	4	5

1. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company.

2.19. CUSTOMERS OF URBAN SEWAGE

Ostan	Year					
	1390		1395		1397	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country.....	4247278	3896159	6491495	5863674	7601152	6935823
East Azarbayejan	393974	364045	610224	546310	722407	645976
West Azarbayejan.....	252191	238837	347996	330563	371659	352867
Ardebil	75527	70010	140493	128204	161610	147964
Esfahan	507722	461324	635946	571401	686772	614556
Alborz	24029	21211	93370	87475	116262	108969
Ilam.....	41812	38854	59690	54475	73209	66125
Bushehr.....	24602	24050	37306	35911	70791	65817
Tehran	325535	305403	937564	851533	1008299	930710
Chaharmahal & Bakhtiyari.....	87155	81002	125196	113171	140418	126913
South Khorasan.....	27448	25866	47209	43723	56600	52455
Khorasan-e-Razavi	342256	285455	520606	430267	891625	825028
North Khorasan.....	33859	30227	51879	45617	56765	49995
Khuzestan	437089	391809	512951	460316	542563	486029
Zanjan.....	27402	25794	43068	40905	66204	62365
Semnan	26635	25582	51482	49105	59724	56643
Sistan & Baluchestan.....	33620	32867	51201	48754	56893	54173
Fars	173651	159830	232256	220127	268772	253582
Qazvin	103000	99541	169501	143341	183859	156685
Qom	34777	34196	78731	76004	103097	100373
Kordestan.....	218782	206899	302879	276111	352552	322283
Kerman	8238	7483	28780	26227	35551	32788
Kermanshah	293663	269395	333713	304079	353217	320475
Kohgiluyeh & Boyerahmad.....	15278	14475	34267	31555	51480	47023
Golestan.....	13460	12499	29996	27443	33345	30173
Gilan	219845	189115	262805	223533	279544	235640
Lorestan	141375	132592	213191	191169	245190	217313
Mazandaran	13040	12728	38321	37043	47342	44403
Markazi.....	114731	107539	159015	146528	171734	158001
Hormozgan	53388	48763	74554	64965	80811	70010
Hamedan.....	157244	154435	230677	223827	253833	244986
Yazd	25950	24333	36628	33992	59024	55503

2.19. CUSTOMERS OF URBAN SEWAGE (continued)

Ostan	Year					
	1398		1399		1400	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
Total country.....	7927218	7219220	8258941	7516811	8558291	7751887
East Azarbayejan	765701	682829	804738	714240	835664	733637
West Azarbayejan.....	384837	365404	393559	373690	401831	381380
Ardebil	174441	158305	174441	158305	195958	175333
Esfahan	709892	633807	727540	648583	743087	662740
Alborz	123625	116258	130551	122928	139116	130969
Ilam.....	82128	76500	87828	80936	92666	84855
Bushehr.....	72967	67775	83006	79364	88185	85539
Tehran	1025403	937729	1053790	959810	1054572	961190
Chaharmahal & Bakhtiyari.....	146955	132984	153393	138924	158799	142464
South Khorasan.....	59873	55618	64464	59709	75676	63743
Khorasan-e-Razavi	947878	875849	998683	921937	1045451	964096
North Khorasan.....	67608	60008	72598	64737	80680	72769
Khuzestan	553733	494573	563191	501276	574468	508995
Zanjan	71249	66852	74247	69295	75643	70540
Semnan	62302	59182	65326	61233	69239	64843
Sistan & Baluchestan.....	62132	59112	65097	61875	69343	65931
Fars	287719	269974	305658	286544	319587	298999
Qazvin	194421	180741	198409	184380	209446	192909
Qom	116977	113728	126994	123223	131536	127507
Kordestan.....	367226	333777	381360	345402	395634	357088
Kerman	39905	36940	43653	40246	47436	43311
Kermanshah	363579	328362	382747	341365	393597	347597
Kohgiluyeh & Boyerahmad.....	56368	51469	59738	54574	62224	56623
Golestan.....	34430	30935	35981	32129	41526	36211
Gilan	286965	238828	293959	243760	299308	246593
Lorestan	249924	218193	256719	237031	274326	252378
Mazandaran	49485	46255	50739	47385	51941	48236
Markazi.....	180527	165781	186603	170858	189822	173641
Hormozgan	82260	71075	86314	77066	84881 ⁽¹⁾	73226 ⁽¹⁾
Hamedan.....	263697	253015	274104	262609	284603	261123
Yazd	43011 ⁽¹⁾	37362 ⁽¹⁾	63511	53397	78171	67421

2.19. CUSTOMERS OF URBAN SEWAGE (continued)

Ostan	Year	
	1401	
	Total customers	Household customers
Total country	8824218	7884204
East Azarbayejan.....	868458	758161
West Azarbayejan	410077	388456
Ardebil	207559	185127
Esfahan	762394	676008
Alborz.....	148982	137067
Ilam	98213	89407
Bushehr	90080	81696
Tehran	1069468	896609
Chaharmahal & Bakhtiari	161667	146106
South Khorasan	72820	67383
Khorasan-e-Razavi.....	1105095	1000935
North Khorasan	83808	73815
Khuzestan	584875	517391
Zanjan.....	80193	74686
Semnan.....	70301	65827
Sistan & Baluchestan	76659	71011
Fars	327555	304997
Qazvin	214204	196527
Qom	135937	131473
Kordestan	409935	368946
Kerman	48016	44033
Kermanshah	402798	354107
Kohgiluyeh & Boyerahmad	63708	57912
Golestan	42613	36994
Gilan.....	303635	249655
Lorestan.....	284902	263204
Mazandaran.....	54196	50084
Markazi	193973	177513
Hormozgan.....	85113	72658 ⁽¹⁾
Hamedan	287785	278093
Yazd	79199	68323

1. Revised figures.

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

Source: National Water and Wastewater Engineering Company.

2.20. RATIO OF THE POPULATION COVERED BY URBAN SEWAGE COLLECTION AND REMOVAL SERVICES

Ostan	Year							
	1385	1390	1395	1397	1398	1399	1400	1401
Total country	27	37	47	51	52	52	53	54
East Azarbayejan.....	39	54	60	66	68	69	70	72
West Azarbayejan.....	41	56	63	65	67	67	67	67
Ardebil	27	41	49	53	55	55	56	58
Esfahan	43	58	64	67	67	67	68	69
Alborz	000 ⁽¹⁾	11	28	31	35	35	36	38
Ilam.....	29	38	49	54	57	58	59	61
Bushehr.....	19	23	25	23	30	29	29	30
Tehran	18 ⁽¹⁾	24	42	47	49	50	52	53
Chaharmahal & Bakhtiari.....	43	54	53	61	65	65	65	67
South Khorasan.....	21	28	30	33	33	34	38	40
Khorasan-e-Razavi	15	36	53	59	61	62	63	64
North Khorasan.....	21	28	34	32	38	38	40	41
Khuzestan	47	53	61	62	62	59	48	57
Zanjan.....	8	18	31	37	40	40	40	42
Semnan	11	14	23	28	31	30	49	39
Sistan & Baluchestan.....	8	12	19	24	24	22	23	25
Fars	11	24	35	40	44	47	46	48
Qazvin ⁽²⁾	41	55	62	71	66	66	66	68
Qom	14	20	34	34	38	41	41	42
Kordestan.....	75	97	92	96	96	95	96	97
Kerman	3	5	11	13	13	13	14	15
Kermanshah	52	64	86	87	87	71	71	73
Kohgiluyeh & Boyerahmad.....	13	18	28	36	47	47	46	48
Golestan.....	6	10	16	16	17	17	20	20
Gilan	54	62	68	70	71	71	72	74
Lorestan	40	54	58	67	67	59	59	61
Mazandaran	3	6	11	16	17	17	17	19
Markazi.....	36	52	62	67	70	70	71	72
Hormozgan	28	34	51	58	52 ⁽²⁾	51	51	51
Hamedan.....	44	60	71	74	75	75	75	77
Yazd.....	7	12	23	40	39 ⁽³⁾	40	41	40

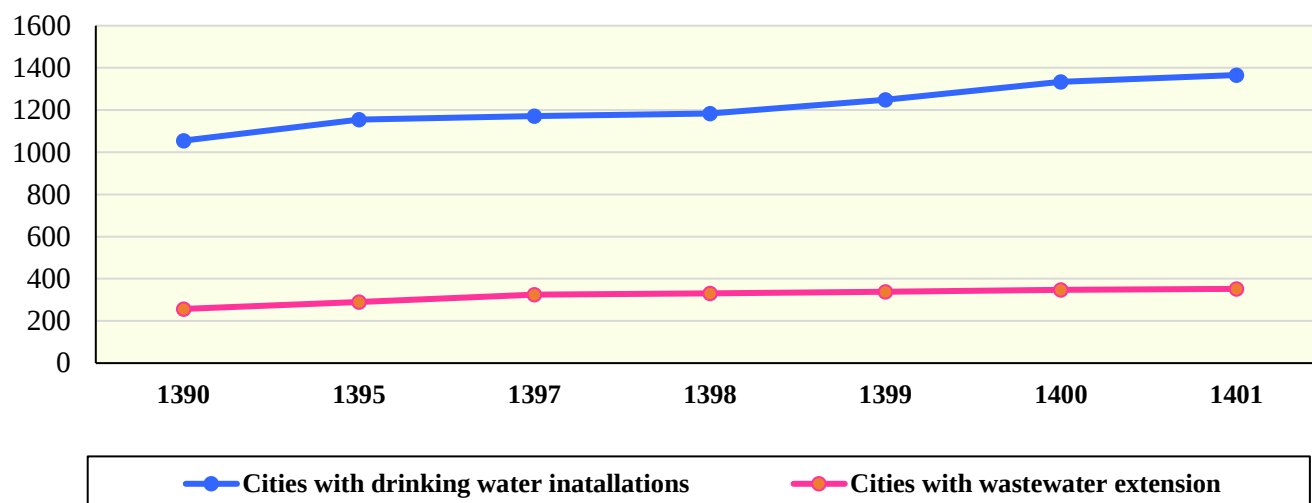
1. The statistics for Alborz are included with Tehran.

2. Revised figures.

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

Source: National Water and Wastewater Engineering Company.

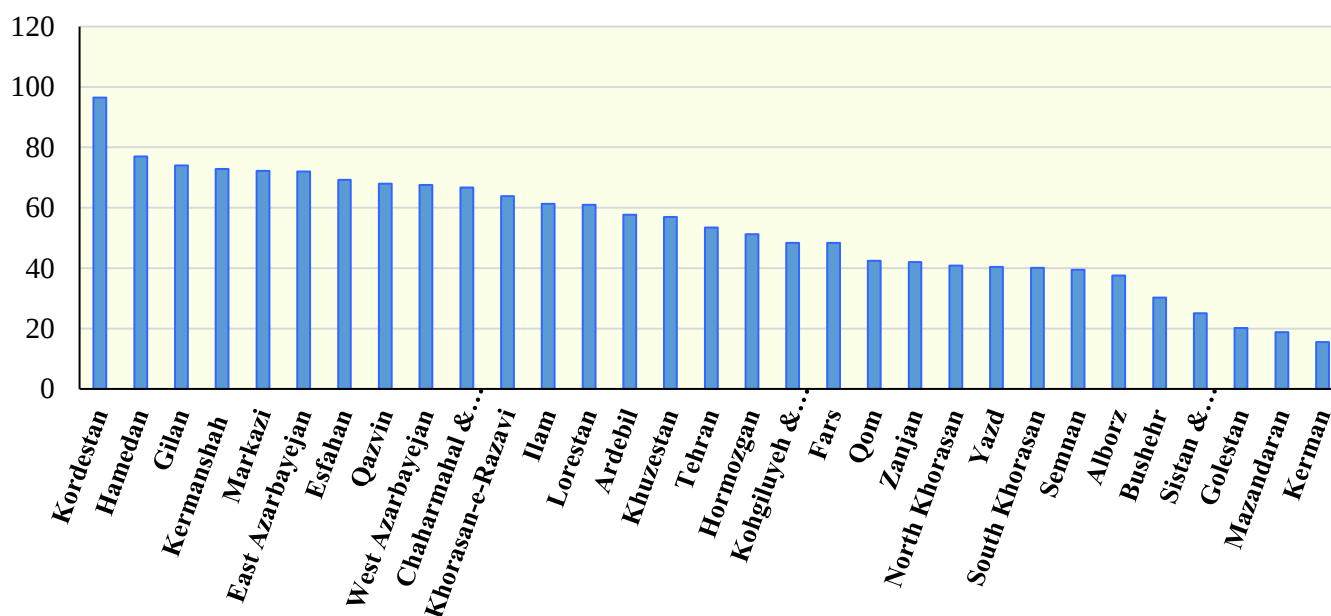
2.3. CITIES COVERED WITH DRINKING WATER INSTALATIONS AND WITH WASTEWATER EXTENTION



For data see Tables 2.16 and 2.17.

2.4. PROPORTION OF THE POPULATION COVERED BY URBAN WASTEWATER COLLECTION AND SANITARY DISPOSAL SERVICES, THE YEAR 1401

Percent



For data see Table 2.20.

2.21. AVERAGE DAILY VOLUME OF COLLECTED SEWAGE**(cum)**

Ostan	Year							
	1385	1390	1395	1397	1398	1399	1400 ⁽¹⁾	1401
Total country.....	1938898	2863322	4401032	5264706	5680317	5720555	5871443	6243757
East Azarbayejan.....	88428	207648	274707	336444	373880	381966	391646	399944
West Azarbayejan.....	121300	182430	243865	257486	271293	291719	293873	288437
Ardebil	28640	47124	97418	72158	79035	82514	99403	119266
Esfahan	390450	446526	482765	475621	488087	521403	530908	536376
Alborz	000 ⁽²⁾	26897	113241	136717	152885	177543	194789	211800
Ilam.....	13400	21460	29848	33938	39790	43726	26071	43805
Bushehr.....	17850	35262	44747	59080	49013	32640	37736	49232
Tehran	495872 ⁽²⁾	567088	801166	1280781	1078377	1214047	1104113	1290482
Chaharmahal & Bakhtiari.....	40256	45210	55256	57566	64197	73255	61769	71008
South Khorasan.....	4060	8024	12895	16522	17857	21029	21050	23949
Khorasan-e-Razavi	101370	159200	227268	306287	289766	284638	282360	273616
North Khorasan.....	10890	15200	18827	19512	22394	31035	30559	30050
Khuzestan	102090	130700	579329	554873	758777	527483	828648	835507
Zanjan.....	3100	14230	31858	38982	33750	42824	42595	42269
Semnan	900	6420	10905	11986	12444	29394	35953	36756
Sistan & Baluchestan.....	8620	13150	17591	18707	29823	30306	31092	29542
Fars	34112	129760	165658	195671	324639	238898	245821	241601
Qazvin	22360	75240	97099	104251	107471	122279	86810	86256
Qom	15620	53248	63022	66084	67315	84136	97094	99150
Kordestan.....	51260	75246	192380	206955	220195	247594	220851	239599
Kerman	1850	7122	17918	25315	31745	33750	31053	32577
Kermanshah	126854	163580	234976	260441	270957	250903	259083	261376
Kohgiluyeh & Boyerahmad.....	1230	2841	20822	23652	23680	35922	38847	40636
Golestan.....	984	8500	24171	30719	38601	40627	39818	38475
Gilan	81254	120461	176189	194320	202049	218033	217911	217999
Lorestan	61258	88546	85471	124096	231137	202328	97061	179002
Mazandaran	5200	14200	48041	53135	56913	79830	57803	60023
Markazi.....	34560	72121	98914	123488	129357	140097	137177	141239
Hormozgan	20150	40293	54616	71041	95185	110119	104460	113160
Hamedan.....	49560	76541	60791	91867	99149	108945	193020	176309
Yazd.....	5420	9054	19278	17011	20557	21572	32069	34316

1. Revised figures.

2. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company.

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

Ostan	Year					
	1390		1395		1397	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country.....	42391	2390	55626	2982	62156	3331
East Azarbayejan.....	2420	22	3261	60	3617	88
West Azarbayejan.....	2278	58	2823	70	3087	84
Ardebil	933	32	1163	44	1293	48
Esfahan	5941	363	7461	414	8152	439
Alborz.....	508	26	858	34	986	36
Ilam.....	683	15	835	24	953	25
Bushehr.....	455	48	510	48	553	54
Tehran	4671	80	7186	268	8365	320
Chaharmahal & Bakhtiari....	886	73	1102	88	1238	94
South Khorasan.....	308	20	463	22	532	31
Khorasan-e-Razavi	2830	290	3995	309	4592	316
North Khorasan.....	274	18	395	26	480	28
Khuzestan	3798	435	5452	639	6025	756
Zanjan.....	363	10	452	14	501	16
Semnan	303	18	460	27	534	28
Sistan & Baluchestan.....	459	16	666	30	703	30
Fars	2043	181	2458	223	3005	257
Qazvin	1028	49	1263	53	1321	60
Qom	672	8	878	15	972	15
Kordestan.....	1453	122	1729	147	1776	150
Kerman	351	11	551	12	768	22
Kermanshah	2645	232	2718	112	2811	115
Kohgiluyeh & Boyerahmad...	235	30	292	21	431	21
Golestan.....	484	23	553	27	569	24
Gilan	644	45	691	53	735	57
Lorestan	1179	31	1474	35	1623	35
Mazandaran	593	18	868	20	927	23
Markazi.....	1345	31	1608	32	1697	39
Hormozgan	750	16	864	28	951	31
Hamedan.....	1233	49	1379	59	1526	60
Yazd.....	626	20	1218	28	1429	29

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

Ostan	Year					
	1398		1399		1400 ⁽¹⁾	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
Total country.....	64506	3407	65841	3602	67250	3619
East Azarbayejan	3768	88	3860	100	3919	100
West Azarbayejan.....	3166	85	3233	87	3285	88
Ardebil	1390	51	1426	53	1402	54
Esfahan	8393	471	8503	492	8652	499
Alborz	1046	40	1115	45	1181	46
Ilam.....	1054	26	1080	26	1103	26
Bushehr.....	580	59	590	60	618	60
Tehran	8574	358	8786	368	8837	326
Chaharmahal & Bakhtiyari....	1274	98	1310	104	1346	104
South Khorasan.....	549	31	577	31	591	31
Khorasan-e-Razavi	4664	220	4737	222	4810	225
North Khorasan.....	514	26	545	27	563	27
Khuzestan	6101	809	6182	859	6042	926
Zanjan	523	16	531	16	548	16
Semnan	540	28	550	33	563	36
Sistan & Baluchestan.....	722	30	747	31	768	31
Fars	3179	262	3275	268	3275	242
Qazvin	1338	65	1399	82	1452	85
Qom	1003	16	1028	16	1051	16
Kordestan.....	2145	160	2170	163	2190	166
Kerman	912	26	1285	36	2007	52
Kermanshah	2887	118	2959	122	2982	122
Kohgiluyeh & Boyerahmad...	492	21	506	21	512	0
Golestan.....	584	27	590	27	592	27
Gilan	756	59	845	68	850	68
Lorestan	1752	35	1186	30	1199	30
Mazandaran	960	23	960	22	975	22
Markazi.....	1707	39	1723	41	1736	41
Hormozgan	970	31	994	32	1018	32
Hamedan.....	1493 ⁽²⁾	60	1537	70	1527	71
Yazd.....	1468	29	1611	49	1656	49

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

Ostan	Year	
	1401	
	Collection network	Transmission lines
Total country.....	68679	3799
East Azarbayejan	3972	100
West Azarbayejan.....	3336	89
Ardebil	1409	57
Esfahan	8754	519
Alborz	1216	56
Ilam.....	1131	26
Bushehr.....	623	62
Tehran	8867	335
Chaharmahal & Bakhtiari.....	1361	104
South Khorasan.....	611	31
Khorasan-e-Razavi	4931	229
North Khorasan.....	574	27
Khuzestan	6161	987
Zanjan	547	16
Semnan	570	36
Sistan & Baluchestan.....	798	31
Fars	3424	279
Qazvin	1461	88
Qom	1052	15
Kordestan.....	2219	168
Kerman	2286	55
Kermanshah	2998	123
Kohgiluyeh & Boyerahmad.....	521	22
Golestan.....	612	27
Gilan	869	70
Lorestan	1242	30
Mazandaran	980	23
Markazi.....	1748	41
Hormozgan	1167	32
Hamedan.....	1559	71
Yazd.....	1681	50

1. Revised figures.

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

Source: National Water and Wastewater Engineering Company.

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

Year and Ostan	Number of industrial towns and regions	In operation	Under construction	Under designing
1385	717	45	27	36
1390	897	129	33	40
1395	958	193	19	49
1397	993	182	17	28
1398	995	189	12	30
1399	1011	233	21	28
1400	1036	241	17	26
1401	1057	250	19	23
East Azarbayegan	58	13	0	1
West Azarbayegan	37	10	2	2
Ardebil	21	5	0	1
Esfahan	80	22	1	3
Alborz	10	6	0	0
Ilam	19	2	0	1
Bushehr	22	1	0	0
Tehran	38	16	3	0
Chaharmahal & Bakhtiari	32	3	1	0
South Khorasan	23	1	0	0
Khorasan-e-Razavi	51	12	3	0
North Khorasan	22	4	0	0
Khuzestan	73	13	1	1
Zanjan	21	5	0	1
Semnan	25	6	0	0
Sistan & Baluchestan	32	6	0	0
Fars	72	10	0	1
Qazvin	16	5	1	0
Qom	11	4	0	0
Kordestan	30	5	1	0
Kerman	48	7	1	0
Kermanshah	24	11	0	0
Kohgiluyeh & Boyerahmad	21	1	0	0
Golestan	26	14	0	3
Gilan	36	11	3	1
Lorestan	24	5	0	0
Mazandaran	47	19	1	6
Markazi	39	12	1	0
Hormozgan	32	3	0	0
Hamedan	32	12	0	2
Yazd	35	6	0	0

Source: Ministry of Industry, Mine and Trade.

2.24. AREA OF LANDSCAPE IN INDUSTRIAL TOWNS AND REGION**(ha)**

Year and Ostan	Area of landscape
1385	616
1390	5441
1395	7505
1397	7920
1398	8074
1399	8225
1400	8382
1401	8491
East Azarbayejan	338
West Azarbayejan.....	154
Ardebil	235
Esfahan	693
Alborz	160
Ilam	54
Bushehr	97
Tehran	902
Chaharmahal & Bakhtiari	316
South Khorasan.....	85
Khorasan-e-Razavi.....	911
North Khorasan.....	56
Khuzestan	257
Zanjan	179
Semnan	571
Sistan & Baluchestan	320
Fars	547
Qazvin	198
Qom	341
Kordestan.....	56
Kerman	446
Kermanshah	239
Kohgiluyeh & Boyerahmad	91
Golestan	167
Gilan	184
Lorestan	43
Mazandaran.....	170
Markazi	315
Hormozgan	59
Hamedan	101
Yazd	207

Source: Ministry of Industry, Mine and Trade.

