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# Environment





## *Introduction*

**E**nvironment is a set of physical and biological factors along with their interactions that affect the behaviors and growth of organisms. Thus, environment is beyond the set of natural, biological, and non-biological factors and also includes the interaction between human 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.

Natural environment is affected by the human activities in different forms. These impacts on the three constituting factors of 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 ground waters, lakes, and springs are main resources of fresh waters which 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 which occurs by wind or water flows, and temperature changes. However, human activities such as intense farming, irrigation of farmlands, monocropping, overgrazing, deforestation, and desertification lead to 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 environment.

The information presented in this chapter include statistics of natural resources; national heritage, forests, ranges, and deserts; 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 1386 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 relation with the environment sector. This Chapter also contains the statistics of emission of pollutant and greenhouse gases resulted from the burning of different types of fuels, which have been published in the Energy Balance Sheet of the Ministry of Energy since the year 1377.

This Chapter also includes the statistics produced by the "National Water and Wastewater Engineering Corporation", "the Ministry of Industry, Mine and Trade" and the "Ministry of Health, Treatment, and Medical Education."

## ***Definitions and Concepts***

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

wildlife and growth of plants in a completely natural condition.

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

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

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

**Greenhouse gases:** The vapor of H<sub>2</sub>O, CO<sub>2</sub>, NO<sub>2</sub>, CH<sub>4</sub>, O<sub>3</sub>, HFCs, and PFCs are called greenhouse gases.

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

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

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

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

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

**Timber:** round wood 1.5 to 2.0 metres in length and 20-40 centimetres in diameter that cannot be

turned into sawn wood.

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

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

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

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

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

**Forest:** 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 forest. Plastic bag seedlings and nurseries created for the purpose of forest protection and development of forests are considered as forest.

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

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

**Water and sewage extension for household use:** This kind of extension is installed in the residential units for conventional consumption of drinking water or disposal of household sewage.

( a place recognized by the Water and Sewage

Company, a residential unit is defined as a place for living which has at least one room, a kitchen, a toilet, and has independent entrance or has an entrance leading to a common hallway).

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

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

**Treatment and removal of sewage:** refers to all the operations related to the use of installation and the equipment related to the 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 1394, the area of zones protected by the Iran Department of Environment was about 17108335 hectares of which the Ostans of Kerman with 2405943 hectares and Qazvin with 25344 hectares had the highest and lowest areas respectively.

In the year 1394, the average volume of collected wastewater was 4242400 cu m which shows a 10.25 percent rise compared to the year 1393. The Ostans of Khuzestan and Tehran with 18.1 percent and 15.5 percent had the most collected wastewater volume and the Ostans of Lorestan & Semnan with 0.25 percent and 0.24

percent had the lowest volumes, respectively.

In the year 1393, among the pollutant and greenhouse gases resulted from burning of fuels in transportation, CO<sub>2</sub> with 150173422 tons had the greatest portion; namely 93.1% of the total pollutant and greenhouse gases emitted in this sector. It should be cited that the greatest portion of CO<sub>2</sub> production is related to the burning of gas oil and the lowest one goes to the liquefied gas.

In the year 1394 about 44 percent of the population of the country were under the coverage of the network for collection and transmission services of urban sewage which shows a 4.7 percent rise compared to the previous year. The highest and lowest shares of the population under the coverage of this network belong to the Ostans of Kordestan and Kerman with about 92 and 10 percent, respectively.

In the year 1394, 84.0 percent of hospitals enjoyed appropriate solid waste management system; moreover, 74.3 percent of hospitals had appropriate sewage management system which shows a 5 percent increase and a 0.9 decrease in comparison with the previous year, respectively.

**2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1394** (hectare)

Ostan	Total		National park		Wildlife habitat	
	Number	Area	Number	Area	Number	Area
<b>Total country</b> .....	<sup>(1)</sup> <b>280</b>	<b>17108335</b>	<b>29</b>	<b>2001629</b>	<b>44</b>	<b>5595749</b>
East Azarbayejan.....	14	591565	2	15926	1	89944
West zarbayejan.....	7	662737	1	540729	2	5756
Ardebil .....	4	136979	0	0	0	0
Esfahan .....	10	974921	2	77148	4	597244
Alborz.....	2	72617	0	0	0	0
Ilam .....	6	148217	0	0	0	0
Bushehr .....	7	151555	2	67123	1	2082
Tehran .....	11	426638	3	47203	0	0
Chaharmahal & bakhtiyari.....	7	157815	1	4372	0	0
South Khorasan .....	7	1873401	0	0	3	1602684
Khorasan-e-Razavi .....	28	927832	1	35540	3	95411
North Khorasan .....	11	194080	3	30542	1	69174
Khuzestan .....	15	685781	2	11594	1	328752
Zanjan .....	3	244654	0	0	1	29812
Semnan .....	7	2106907	2	543285	2	453458
Sistan & Baluchestan ...	9	886020	0	0	1	293031
Fars .....	11	1174256	3	255733	1	153721
Qazvin .....	1	25344	0	0	0	0
Qom .....	1	30945	0	0	0	0
Kordestan .....	5	179456	0	0	1	3292
Kerman .....	16	2405943	1	149982	4	1431742
Kermanshah .....	6	161644	0	0	1	40651
Kohgiluyeh& Boyerahmad .....	8	208699	1	25839	0	0
Golestan .....	4	136822	1	87402		0
Gilan .....	16	132329	1	3359	5	3895
Lorestan .....	5	194015	0	0	1	24945
Mazandaran .....	24	524296	2	27518	5	84981
Markazi .....	5	133911	0	0	2	27852
Hormozgan .....	16	714053	0	0	2	4378
Hamedan .....	6	60880	0	0	0	0
Yazd .....	8	784022	1	78334	2	252944

**2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT AT THE END OF THE YEAR 1394 (continued) (hectare)**

Ostan	Protected zones		National natural heritages	
	Number	Area	Number	Area
<b>Total country</b> .....	<sup>(1)</sup> <b>170</b>	<b>9473070</b>	<b>37</b>	<b>37887</b>
East Azarbayejan.....	10	484668	1	1027
West zarbayejan.....	3	116250	1	2
Ardebil .....	2	129108	2	7871
Esfahan .....	4	300529	0	0
Alborz.....	2	72617	0	0
Ilam .....	4	146695	2	1522
Bushehr .....	2	77768	2	4582
Tehran .....	5	374940	3	4495
Chaharmahal & bakhtiyari.....	5	153063	1	380
South Khorasan .....	4	270717	0	0
Khorasan-e-Razavi .....	21	786988	3	9893
North Khorasan .....	4	94280	3	84
Khuzestan .....	11	345385	1	50
Zanjan .....	2	214842	0	0
Semnan .....	3	1110164	0	0
Sistan & Baluchestan .....	4	592757	4	232
Fars .....	7	764802	0	0
Qazvin .....	1	25344	0	0
Qom .....	1	30945	0	0
Kordestan .....	4	176164	0	0
Kerman .....	10	824219	1	//
Kermanshah .....	3	120992	2	1
Kohgiluyeh& Boyerahmad .....	7	182860	0	0
Golestan .....	3	49420	0	0
Gilan .....	6	124814	4	261
Lorestan .....	3	169069	1	1
Mazandaran .....	14	406274	3	5523
Markazi .....	2	106055	1	4
Hormozgan .....	13	707719	1	1956
Hamedan .....	6	60880	0	0
Yazd .....	4	452742	1	2

1. Central Alborz Protected Area is shared between three Ostans namely Ostans of Tehran, Alborz and Mazandaran so it was repeated 3 times, accordingly, the number of protected area is 168 and total number of area in the country amounts to 278.

Source: Iran Department of Environment.





**2.2. AREA OF FORESTS, RANGES AND DESERTS BY OSTAN, THE YEAR 1394(hectare)**

Ostan	Forests	Ranges				Deserts <sup>(1)</sup>
		Total	Good (dense)	Fair ( semi-dense)	Poor (low dense)	
<b>Total country</b> .....	<b>14319063</b>	<b>84814991</b>	<b>7181250</b>	<b>21419151</b>	<b>56214590</b>	<b>32576492</b>
East Azarbayejan.....	143467	2473441	703729	1359707	410005	112370
West zarbayejan.....	100958	2472508	553792	1063376	855340	181103
Ardebil .....	51665	903896	427906	457642	18349	1337
Esfahan .....	411847	6328655	280070	403988	5644597	2985827
Alborz.....	2420	438169	187209	125480	125480	12657
Ilam .....	634461	1112357	27835	479788	604735	33923
Bushehr .....	204306	1262995	8777	409208	845010	331682
Tehran .....	23895	848298	220289	349042	278967	143529
Chaharmahal & bakhtiyari.....	335654	908152	182315	390823	335013	118893
South Khorasan .....	740412	8361342	6184	925579	7429578	4445893
Khorasan-e-Razavi .....	667341	6558356	304530	2147046	4106780	593620
North Khorasan .....	424740	1555206	112615	627244	815348	43279
Khuzestan .....	938326	2477691	571073	1353096	553522	521341
Zanjan .....	61113	1137060	240442	425301	471317	79931
Semnan .....	340168	3731083	210807	585093	2935183	5112294
Sistan & Baluchestan .....	370786	10648499	217096	908129	9523274	4804956
Fars .....	2218925	7319987	57706	1735276	5527005	669725
Qazvin .....	26871	853485	252550	430122	170813	29151
Qom .....	4149	723019	2498	34830	685691	176383
Kordestan .....	372307	1294397	437855	494212	362330	3354
Kerman .....	591823	8186300	81323	2214046	5890931	7860548
Kermanshah .....	528507	1188438	164352	476166	547920	25916
Kohgiluyeh& Boyerahmad	795786	478812	63966	144418	270428	40427
Golestan .....	415221	862825	381317	401887	79621	26
Gilan .....	545576	244986	98843	131684	14459	1779
Lorestan .....	1226367	883505	146857	672209	64439	11741
Mazandaran .....	1006518	584711	357671	205068	21973	1086
Markazi .....	1548	1772951	465804	1140366	166781	73143
Hormozgan .....	1053745	4093342	712	210907	3881724	1515013
Hamedan .....	1441	665767	323505	283977	58285	26372
Yazd .....	78718	4444757	91623	833441	3519693	2619196

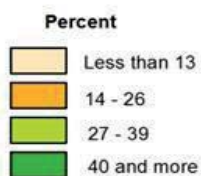
1.Including different desert phenomena like: salt desert, sand dunes, sand sheets, clay plain, salt lands, lands with no vegetation and exposed bedrock outcrops.

Source: Forests, Range and Watershed Management Organization

**2.2. RATIO OF FORESTS AREA TO THE AREA OF THE TOTAL OSTANS, THE YEAR 1394**



For data see Table 2.2 and 1.4



**2.3. CASES AND AREAS UNDER CONFLAGRATION IN FORESTS AND RANGES**

Year	Conflagration (case)			Area under conflagration (ha)		
	Total	Forests	Ranges	Total	Forests	Ranges
1375 .....	1181	439	742	27478	5829	21649
1380 .....	801	369	432	7744	3184	4560
1385 .....	1237	611	626	11132	2752	8380
1390.....	1324	447	877	36972	23656	13316
1391.....	1183	506	677	8131	1544	6587
1392.....	1897	657	1240	15134	3649	11485
1393.....	2016	1134	882	18828	6789	12039
<b>1394.....</b>	<b>2088</b>	<b>887</b>	<b>1201</b>	<b>18480</b>	<b>4716</b>	<b>13764</b>

Source: Forests, Range and Watershed Management Organization.

**2.4. VOLUME OF WOOD PRODUCTS<sup>(1)</sup> UNDER JURISDICTION OF MANAGEMENT OF GENERAL DEPARTMENTS OF NATURAL RESOURCES OF NORTHERN FOREST AREAS**  
(1000 cu m)

Year	Log	Sawn wood and sleepers	Poles, pit props and pulpwood	Fuel wood	Charcoal (1000 tons)
1375 .....	371	144	244	656	26
1380 .....	328	87	245	504	6
1385 .....	285	50	209	295	1
1390.....	255	31	230	221	//
1391.....	288	35	250	250	1
1392.....	233	31	205	197	//
1393.....	256	31	205	191	//
<b>1394.....</b>	<b>201</b>	<b>26</b>	<b>166</b>	<b>162</b>	<b>//</b>

1. Including 5% defect and sawn wood amount for the years 1385 and 10% for the remaining years.

Source: Forests, Range and Watershed Management Organization.

**2.5. COMBATING DESERTIFICATION AND DUNE STABILIZATION ACTIVITIES**

Year and Ostan <sup>(1)</sup>	Plant nursery (ha)	Plastic bag seedling (1000)	Plantation (ha)	Seeding (ha)
1375 .....	59	3470	43471	131975
1380 .....	25	4290	34556	59610
1385.....	32	7349	31056	27724
1390.....	13	2569	8212	4748
1391.....	22	1575	3048	1010
1392.....	2	720	9990	843
1393.....	1	1163	13807	878
<b>1394.....</b>	<b>17</b>	<b>1467</b>	<b>32134</b>	<b>2148</b>
East Azarbayejan.....	0	0	1100	0
West Azarbayejan. ....	0	0	1784	0
Esfahan .....	1	150	1676	1118
Alborz .....	0	0	386	0
Ilam .....	0	0	1300	0
Bushehr . ....	0	54	200	0
Tehran .....	0	0	598	0
South Khorasan .....	7	178	1095	0
Khorasan-e-Razavi.....	8	435	1812	0
North Khorasan .....	0	0	150	0
Khuzestan .....	0	0	17276	0
Semnan .....	1	50	880	1030
Sistan & Baluchestan .....	0	40	420	0
Fars .....	0	0	355	0
Qazvin .....	0	75	485	0
Qom.....	0	0	143	0
Kerman .....	0	210	915	0
Golestan .....	0	0	212	0
Markazi . ....	0	275	900	0
Hormozgan .....	0	0	294	0
Hamadan .....	0	0	83	0
Yazd .....	0	0	70	0

**2.5. COMBATING DESERTIFICATION AND DUNE STABILIZATION ACTIVITIES****(continued)**

Year and Ostan <sup>(1)</sup>	Seed gathering (ton)	Mulching (ha)	Windbreak(not living) (km)	Windbreak (km)	Preservation (ha)	Preparation of projects for combating desertification (1000ha)
1375 .....	917	2812	29	0	596801	841
1380 .....	489	1650	468	0	703937	289
1385.....	230	4452	42	1087	816831	254
1390.....	72	0	23	518	408404	8000
1391.....	95	0	0	55	221851	0
1392.....	60	0	0	779	192233	9
1393.....	92	0	1	1493	247073	23
<b>1394.....</b>	<b>77</b>	<b>605</b>	<b>17</b>	<b>336</b>	<b>210602</b>	<b>0</b>
East Azarbayejan.....	0	0	0	0	0	0
West Azarbayejan .....	0	0	0	3	0	0
Esfahan .....	11	0	0	0	45142	0
Alborz .....	0	0	0	0	0	0
Ilam .....	0	0	0	0	0	0
Bushehr .....	0	0	0	10	0	0
Tehran .....	0	0	0	0	12250	0
South Khorasan .....	14	0	0	6	1400	0
Khorasan-e-Razavi.....	15	0	0	0	0	0
North Khorasan .....	0	0	0	0	10100	0
Khuzestan .....	0	605	0	0	34750	0
Semnan .....	34	0	12	60	19000	0
Sistan & Baluchestan .....	0	0	0	0	0	0
Fars .....	0	0	0	0	0	0
Qazvin .....	2	0	0	0	8750	0
Qom.....	0	0	0	0	6382	0
Kerman .....	0	0	5	245	0	0
Golestan .....	0	0	0	0	0	0
Markazi .....	//	0	0	12	64200	0
Hormozgan .....	0	0	0	0	0	0
Hamadan .....	0	0	0	0	0	0
Yazd .....	0	0	0	0	8628	0

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

Source: Forests, Range and Watershed Management Organization.

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

Activity	Units	The year 1375	The year 1380	The year 1385	The year 1390	The year 1391	The year 1392	The year 1393	The year 1394
<b>Range management and balance of livestock and range management<sup>(1)</sup></b>									
Cadastral survey, delineation and control of grazing permits.....	1000 ha	4251	2666	3993	2439	857	601	1877	283
Preparation of range management plans.....	1000 ha	3409	1009	1531	462	194	2	36	38
Range and livestock grazing management in range allotments .....	1000 ha	0	11059	59728	25732	16437	10768	4641	4018
<b>Improvement and rehabilitation of rangelands<sup>(2)</sup></b>									
Improvement and rehabilitation of rangelands project .....	1000 ha	0	0	136	0	-	0	0	0
<b>Rehabilitation and restoration of rangelands<sup>(2)</sup></b>									
Transplanting seedlings.....	1000 ha	8	17	4	1	1	1	1	2
Direct seeding and hoeing..	1000 ha	32	61	49	19	5	5	6	5
Fertilizer spreading on rangelands .....	1000 ha	21	17	29	9	4	3	1	2
Water harvesting .....	1000 ha	80	59	42	43	3	4	4	3
Providing water troughs .....	Set	1275	1581	2105	1181	292	278	632	620
Drilling shallow wells .....	case	158	173	90	57	24	35	43	15
Installation of wind pumps..	Set	2	11	18	29	0	3	1	3
Seed production.....	Ton	671	468	390	1840	303	188	17	124
Restoration of pastures on degraded marginal lands .....	1000ha	18	11	12	4	2	1	1	1

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

2. Since the year 1384, the plan of "Improvement and Reformation of Range lands" has been provincialized and since 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
1375 .....	2225669	1370893	813192	41578	0
1380 .....	2919813	1761637	656242	213176	288758
1385.....	4574238	2511989	1244861	378162	439226
1390.....	1603623	1093827	315146	61900	132750
1391.....	1633822	1383979	194196	53947	1700
1392.....	1645379	1193247	443558	8574	0
1393.....	2193023	1402276	540089	250658	0
<b>1394.....</b>	<b><sup>(1)</sup>1432288</b>	<b>1148765</b>	<b><sup>(1)</sup>212970</b>	<b>70553</b>	<b>0</b>
East Azarbayejan.....	43661	35581	5726	2354	0
West Azarbayejan .....	38184	28443	7744	1997	0
Ardebil .....	53141	45514	5634	1993	0
Esfahan .....	43069	33768	6495	2806	0
Alborz .....	6013	4815	598	600	0
Ilam .....	18703	16207	1446	1050	0
Bushehr .....	7048	2726	2200	2122	0
Tehran .....	20961	16946	1591	2424	0
Chaharmahal & Bakhtiyari	18361	15811	1854	696	0
South Khorasn .....	9006	7000	1156	850	0
Khorasan-e-Razavi .....	122096	92274	26733	3089	0
North Khorasn .....	23228	16810	4985	1433	0
Khuzestan .....	210627	190774	13553	6300	0
Zanjan .....	25530	20639	4468	423	0
Semnan .....	18499	12471	1809	4219	0
Sistan & Baluchestan .....	20747	15904	3603	1240	0
Fars .....	130594	123139	5577	1878	0
Qazvin .....	30532	21104	7129	2299	0
Qom .....	9214	6780	2210	224	0
Kordestan .....	41071	32809	4705	3557	0
Kerman <sup>(2)</sup> .....	67698	50263	14782	2653	0
Kermanshah .....	61645	52175	6741	2729	0
Kohgiluyeh & Boyerahmad	15250	13327	1523	400	0
Golestan .....	109368	84060	22445	2863	0
Gilan .....	46985	33462	5886	7637	0
Lorestan .....	55870	45085	8590	2195	0
Mazandaran .....	80373	62925	13194	4254	0
Markazi .....	41359	27733	12177	1449	0
Hormozgan .....	9013	5567	2617	829	0
Hamedan .....	43326	32728	7677	2921	0
Yazd .....	3910	1925	916	1069	0

1. The difference between the total and its parts is due to the amount of phosphate which was distributed for storage.

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

Source: Agricultural Support Services Company.

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

Year	Total	Insecticides	Acaricides	Fungicides	Herbicides	Rodenti- cides	Mollusc- ocides	Granule and oil <sup>(1)</sup>	Others
1375 .....	15823	<sup>(2)</sup> 7986	1152	1921	4661	55	14	<sup>(2)</sup> 000	34
1380 .....	25578	<sup>(3)</sup> 8663	1134	2813	7211	122	65	5537	33
1385 .....	20894	<sup>(3)</sup> 3917	240	3285	9971	5	0	3394	82
1390.....	3574	162	30	188	1181	0	0	2004	9
1391.....	1884	92	29	122	530	0	0	1109	1
1392.....	724	6	0	27	94	0	0	449	148
1393.....	1195	49	0	49	292	0	0	801	4
<b>1394.....</b>	<b>997</b>	<b>57</b>	<b>46</b>	<b>0</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>830</b>	<b>19</b>

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

2. Granule and oil pesticides are included with insecticides in the year 1375.

3. Including tablets.

Source: Agricultural Support Services Company.

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

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
1385.....	66602	68185	415	18968	29072	11114290	000	000
1389.....	71174	73105	444	17158	31095	13718063	741	4834
1390.....	60871	62639	381	14128	26593	12344301	642	4136
1391.....	60900	62542	380	14690	26607	12612274	649	4138
1392.....	60110	61659	375	14141	26277	12937229	644	4087
<b>1393.....</b>	<b>54004</b>	<b>55519</b>	<b>340</b>	<b>12234</b>	<b>23604</b>	<b>12474815</b>	<b>590</b>	<b>3672</b>
Motor sprit.....	16	2	-	420	2	2855	3	//
Burning oil .....	10	46	-	15	-	49475	2	//
Gas oil .....	53939	55288	337	11799	23598	9498980	532	3666
Fuel oil .....	39	183	3	//	4	12594	//	//
Natural gas .....	0	0	0	0	0	2910911	52	5

Source: Ministry of Energy.



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

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
1385 .....	131299	138668	1995	16473	15157	61522460	000	000
1389 .....	168212	300397	4467	32295	18143	88554272	2135	329
1390 .....	162056	190465	2806	24553	16776	91536175	2009	316
1391 .....	168065	202589	2996	14687	17228	94598785	2075	279
1392 .....	162924	171867	2516	15669	16968	93437617	2023	267
<b>1393 .....</b>	<b>173129</b>	<b>172715</b>	<b>2530</b>	<b>21945</b>	<b>17793</b>	<b>100392669</b>	<b>2138</b>	<b>279</b>
Motor sprit .....	624	69	-	16170	60	109915	5	1
Burning oil .....	4	19	-	6	-	21092	1	//
Gas oil .....	12875	40428	515	515	3863	7255539	294	59
Fuel oil .....	28109	131930	2015	10	2811	9076803	352	70
Liquefied gas .....	34	//	-	22	-	51306	1	//
Natural gas .....	131483	269	-	5222	11059	83045955	1480	148
Coke gas.....	000	000	000	000	000	107528	2	//
Blast furnace gas.....	000	138668	000	000	000	724531	3	//

Source: Ministry of Energy

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

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b><i>Total transportation sector</i></b>								
1385.....	853845	350932	3725	9512573	273446	111500973	000	000
1389.....	871972	389358	4248	7937478	568834	124681489	41656	5736
1390.....	870086	410401	4572	7799735	307679	126377800	42470	5687
1391.....	895715	397972	4327	8286992	314674	130791492	45678	5930
1392.....	929137	417993	4576	8897621	320725	135987919	47025	6132
<b>1393.....</b>	<b>979812</b>	<b>588904</b>	<b>7158</b>	<b>9035554</b>	<b>329885</b>	<b>150173422</b>	<b>48488</b>	<b>6291</b>
Motor spirit.....	341428	37937	-	8851850	32877.8	60168710	28545	2768
Gas oil.....	558937	347784	4141	149050	273258	58367218	2931	3352
Liquefied gas.....	000	000	000	000	000	71693	105	3
Natural gas.....	000	000	000	000	000	15272551	16879	54
Fuel oil.....	37880	177790	2716	14	3788	12232104	000	000
Jet fuel (JP4).....	918	102	-	23800	88	162681	1	5
Jet oil fuel (ATK).....	40649	25292	301	10840	19873	3898466	27	109
<b><i>Road transportation</i></b>								
1385.....	794813	310544	3221	9449575	247237	104591386	000	000
1389.....	801994	346931	3737	7849053	275266	117470093	41575	5254
1390.....	798551	347584	3752	7707863	275729	117951801	42390	5212
1391.....	828475	356394	3831	8208263	282824	123858601	45595	5430
1392.....	849715	357472	3812	8823312	283885	127213375	46938	5607
<b>1393.....</b>	<b>860668</b>	<b>361671</b>	<b>3856</b>	<b>8957589</b>	<b>287229</b>	<b>129609960</b>	<b>48388</b>	<b>5685</b>
Motor spirit.....	340153	37795	-	8818785	32755	59945432	28545	2768
Gas oil.....	520515	323876	3856	138804	254474	54320284	2859	2859
Liquefied gas.....	000	000	000	000	000	71693	105	3
Natural gas.....	000	000	000	000	000	15272551	16879	54
<b><i>Railway transportation</i></b>								
1385.....	8200	5102	61	2192	4009	804228	000	000
1389.....	9247	5754	68	2467	4521	965015	54	372
1390.....	9234	5746	68	2462	4515	963676	54	372
1391.....	9886	6151	73	2636	4833	1031645	58	398
1392.....	10435	6493	77	2783	5102	1088999	61	420
<b>1393.....</b>	<b>12236</b>	<b>7614</b>	<b>91</b>	<b>3263</b>	<b>5982</b>	<b>1276964</b>	<b>72</b>	<b>493</b>
Gas oil.....	12236	7614	91	3263	5982	1276964	72	493

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

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>Marine transportation</b>								
1385.....	18271	15720	212	17240	6815	2811404	000	000
1389.....	20890	12507	156	44036	270048	2329585	000	000
1390.....	24959	34348	483	53801	9572	3802476	000	000
1391.....	20260	12820	155	42425	9246	2269475	000	000
1392.....	30546	30484	408	42484	13233	3939886		
<b>1393.....</b>	<b>65333</b>	<b>194224</b>	<b>2910</b>	<b>39844</b>	<b>16712</b>	<b>15225352</b>	<b>000</b>	<b>000</b>
Motor spirit.....	1267	141	-	32847	122	223278	000	000
Gas oil.....	26186	16294	194	6983	12802	2769970	000	000
Fuel oil.....	37880	177790	2716	14	3788	12232104	000	000
<b>Air transportation</b>								
1385.....	32561	19565	231	43565	15385	3293955	000	000
1389.....	39841	24166	286	41922	18999	3916797	27	110
1390.....	37342	22724	269	35609	17864	3659847	26	102
1391.....	37094	22607	268	33668	17771	3631771	25	102
1392.....	38440	23544	279	29042	18505	3745659	26	105
<b>1393.....</b>	<b>41575</b>	<b>25395</b>	<b>301</b>	<b>34858</b>	<b>19962</b>	<b>4061147</b>	<b>28</b>	<b>114</b>
Jet fuel (JP4).....	918	102	-	23800	88	162681	1	5
Jet oil fuel (ATK).....	40649	25292	301	10840	19873	3898466	27	109
Motor Spirit.....	8	1	-	218	1	000	000	000

Source: Ministry of Energ

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

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
1385.....	121164	87244	956	71176	12576	125869250	000	000
1389.....	119724	95442	1200	76435	12000	133357597	3827	507
1390.....	115934	52887	582	47073	11284	136823495	3836	491
1391.....	107302	53774	614	45552	10517	127626346	4019	518
1392.....	116644	50646	578	46450	11347	138205055	4233	537
<b>1393.....</b>	<b>115371</b>	<b>37505</b>	<b>397</b>	<b>48083</b>	<b>11205</b>	<b>137269757</b>	<b>4168</b>	<b>522</b>
Motor spirit.....	682	76	-	17675	66	120145	5	1
Burning oil... ..	1799	8634	-	2806	-	9367518	391	78
Gas oil.....	4531	14227	181	181	906	2553386	103	21
Fuel oil.....	3009	14123	216	1	301	971650	38	8
Liquefied gas.....	1348	29	-	13484	-	6190036	98	10
Natural gas... ..	104002	416	-	13936	9932	112459347	2005	200
Animal waste.....	000	000	000	000	000	144605	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	2192	1	//
Coal .....	000	000	000	000	000	40801	//	1

Source: Ministry of Energy

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

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
1385 .....	000	000	000	000	000	000	000	000
1389 .....	000	000	000	000	000	17236036	355	43
1390 .....	000	000	000	000	000	14915289	314	39
1391 .....	000	000	000	000	000	14915289	314	39
1392 .....	000	000	000	000	000	27052693	531	62
<b>1393 .....</b>	<b>000</b>	<b>000</b>	<b>000</b>	<b>000</b>	<b>000</b>	<b>24211800</b>	<b>476</b>	<b>55</b>
Gas oil.....	000	000	000	000	000	430747	17	3
Fuel oil.....	000	000	000	000	000	1435040	56	11
Natural gas.....	000	000	000	000	000	17263345	308	31
Refinery gas.....	000	000	000	000	000	4005424	78	8
Liquefied gas .....	000	000	000	000	000	1077244	17	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	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
1385.....	172332	192733	2943	222	20728	110207121	0	000
1389.....	574741	497354	3538	137857	25528	154777386	3522	531
1390.....	634884	709408	5130	148500	30724	165184877	4087	666
1391.....	629392	823623	5319	161831	31957	174664087	4273	698
1392.....	678024	910658	6574	162707	36199	179825215	4725	803
<b>1393.....</b>	<b>651610</b>	<b>627934</b>	<b>4586</b>	<b>177660</b>	<b>31105</b>	<b>177744913</b>	<b>4243</b>	<b>654</b>
<b>Ministry of Energy<sup>(1)</sup>.....</b>	<b>257456</b>	<b>483123</b>	<b>2471</b>	<b>155839</b>	<b>14712</b>	<b>78698285</b>	<b>1975</b>	<b>324</b>
Gas oil.....	33117	18969	505	966	2096	6218151	240	48
Natural gas.....	153251	-	-	64161	4389	39833415	705	70
Fuel oil.....	71089	464154	1966	90712	8228	32646719	1030	206
<b>Private sector.....</b>	<b>380041</b>	<b>144633</b>	<b>2109</b>	<b>18943</b>	<b>15965</b>	<b>91734122</b>	<b>2182</b>	<b>321</b>
Gas oil.....	137992	61219	1620	2168	6722	19276842	770	154
Natural gas.....	225955	-	-	16264	7197	64943788	1156	116
Fuel oil.....	16093	83414	489	511	2045	7513492	256	51
<b>large industries.....</b>	<b>14113</b>	<b>179</b>	<b>6</b>	<b>2878</b>	<b>428</b>	<b>7312507</b>	<b>86</b>	<b>9</b>
Gas oil.....	81	179	6	20	25	33908	2	//
Natural gas.....	14032	-	-	2858	403	4474205	73	7
Coke gas <sup>(2)</sup> .....	000	000	000	000	000	7877	//	//
Blast furnace gas <sup>(2)</sup> .....	000	000	000	000	000	2796517	11	1

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

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

Source: Ministry of Energy.

**2.15. EMISSION OF POLLUTANT AND GREENHOUSE GASES RESULTED FROM  
BURNING OF FUELS IN POWER PLANTS AFFILIATED TO THE MINISTRY OF  
ENERGY, PRIVATE SECTOR, AND LARGE INDUSTRIES BY TYPE OF POWER  
PLANT AND POLLUTANT, THE YEAR 1393 (ton)**

Description	NOX	SO <sub>2</sub>	SO <sub>3</sub>	CO	SPM	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>Total .....</b>	<b>651610</b>	<b>627934</b>	<b>4586</b>	<b>177660</b>	<b>31105</b>	<b>177744913</b>	<b>4243</b>	<b>654</b>
<b>Ministry of Energy.....</b>	<b>257456</b>	<b>483123</b>	<b>2471</b>	<b>155839</b>	<b>14712</b>	<b>78698285</b>	<b>1975</b>	<b>324</b>
Thermal plant.....	138513	465384	1985	151913	10165	49524015	1337	237
Gas power plant.....	51942	10912	276	1960	2677	18361387	377	51
Combined cycle .....	66874	6445	204	1967	1846	10744283	258	35
Diesel power plant.....	127	382	6	//	24	68599	3	1
<b>Private sector.....</b>	<b>380041</b>	<b>144633</b>	<b>2109</b>	<b>18943</b>	<b>15965</b>	<b>91734122</b>	<b>2182</b>	<b>321</b>
Thermal plant.....	43711	83540	491	11745	3118	17691697	428	68
Gas power plant.....	108717	39492	870	3306	6479	38254430	874	129
Combined cycle .....	227612	21600	747	3891	6368	35787994	880	124
large industries.....	14113	179	6	2878	428	7312507	86	9

Source: Ministry of Energy

**2.16. COVERAGE OF URBAN SEWAGE EXTENSION**

Ostan	The year 1390		The year 1391	
	Cities under coverage of fresh water installation	Cities having sewage extension	Cities under coverage of fresh water installation	Cities having sewage extension
<b>Total country.....</b>	<b>1055</b>	<b>258</b>	<b>1082</b>	<b>263</b>
East Azarbayejan .....	57	12	57	12
West Azarbayejan.....	38	10	38	10
Ardebil .....	23	7	23	7
Esfahan .....	97	27	103	27
Alborz.....	17	4	19	4
Ilam.....	19	4	19	4
Bushehr.....	16	3	19	3
Tehran .....	41	7	41	8
Chaharmahal&Bakhtiari.....	26	7	26	6
South Khorasan .....	19	1	19	1
Khorasan-e-Razavi .....	71	5	74	5
North Khorasan .....	18	2	18	2
Khuzestan .....	63	18	62	17
Zanjan.....	18	2	18	2
Semnan .....	17	5	18	6
Sistan&Baluchestan.....	36	2	37	3
Fars .....	79	6	78	7
Qazvin .....	26	10	26	13
Qom .....	2	1	5	1
Kordestan.....	23	19	23	19
Kerman .....	63	2	63	2
Kermanshah .....	27	27	27	27
Kohgiluyeh&Boyerahmad.....	12	2	15	2
Golestan.....	21	4	22	4
Gilan .....	48	33	48	33
Lorestan .....	23	7	23	7
Mazandaran .....	46	7	52	7
Markazi.....	29	7	29	7
Hormozgan .....	33	4	33	4
Hamedan.....	29	11	29	11
Yazd .....	18	2	18	2

**2.16. COVERAGE OF URBAN WASTEWATER EXTENSION (continued)**

Ostan	The year 1392		The year 1393		The year 1394	
	Cities under coverage of fresh water installation	Cities having sewage extension	Cities under coverage of fresh water installation	Cities having sewage extension	Cities under coverage of fresh water installation	Cities having sewage extension
<b>Total country.....</b>	<b>1113</b>	<b>269</b>	<b>1125</b>	<b>280</b>	<b>1144</b>	<b>286</b>
East Azarbayejan .....	57	12	58	12	58	12
West Azarbayejan.....	38	10	38	11	38	11
Ardebil .....	23	8	23	8	26	8
Esfahan .....	104	28	105	31	104	31
Alborz .....	19	7	19	7	19	7
Ilam.....	19	4	19	4	19	4
Bushehr.....	32	3	33	3	33	3
Tehran .....	41	8	41	8	41	8
Chaharmahal&Bakhtiyari .....	34	6	34	8	38	8
South Khorasan.....	21	1	21	1	21	1
Khorasan-e-Razavi .....	74	5	74	7	74	8
North Khorasan.....	18	2	18	2	21	2
Khuzestan .....	62	17	62	17	62	17
Zanjan .....	19	2	19	2	21	3
Semnan .....	18	6	19	6	19	6
Sistan&Baluchestan.....	37	3	37	4	37	4
Fars .....	78	7	81	7	81	8
Qazvin .....	26	13	26	14	26	14
Qom .....	6	1	6	1	6	1
Kordestan.....	24	17	24	18	24	18
Kerman .....	67	2	69	2	69	2
Kermanshah .....	27	27	27	27	28	28
Kohgiluyeh&Boyerahmad.....	15	3	15	3	15	3
Golestan .....	22	4	22	4	22	4
Gilan .....	48	33	48	33	50	34
Lorestan .....	23	7	24	7	24	7
Mazandaran .....	52	7	52	7	54	7
Markazi.....	28	8	30	8	33	8
Hormozgan .....	36	5	36	5	36	6
Hamedan.....	29	11	29	11	29	11
Yazd .....	16	2	16	2	16	2

Source: National Water and Wastewater Engineering Company



**2.17. NUMBER OF WASTEWATER-TREATMENT PLANTS**

Ostan	The year 1385	The year 1390	The year 1391	The year 1392	The year 1393	The year 1394
<b>Total country.....</b>	<b>90</b>	<b>137</b>	<b>146</b>	<b>150</b>	<b>156</b>	<b>164</b>
East Azarbayejan.....	5	7	9	9	9	9
West Azarbayejan.....	4	7	7	7	7	8
Ardebil.....	3	3	3	3	3	3
Esfahan.....	16	21	21	21	24	24
Alborz.....	<sup>(1)</sup> 000	1	1	1	1	1
Ilam.....	3	4	4	4	4	4
Bushehr.....	2	3	3	3	3	3
Tehran.....	<sup>(1)</sup> 9	10	9	9	13	13
Chaharmahal&Bakhtiari.....	4	5	5	5	5	5
South Khorasan.....	1	1	1	1	1	1
Khorasan-e-Razavi.....	5	7	7	7	7	10
North Khorasan.....	1	2	2	2	2	2
Khuzestan.....	4	6	6	6	7	7
Zanjan.....	2	2	2	2	2	2
Semnan.....	2	3	3	3	3	3
Sistan&Baluchestan.....	1	2	2	3	2	2
Fars.....	2	2	4	4	3	4
Qazvin.....	3	4	4	4	4	4
Qom.....	1	2	2	2	2	3
Kordestan.....	1	3	3	3	4	5
Kerman.....	1	1	1	1	2	1
Kermanshah.....	5	7	7	7	7	7
Kohgiluyeh&Boyerahmad.....	1	1	2	2	2	2
Golestan.....	2	3	4	4	4	4
Gilan.....	1	2	3	4	4	4
Lorestan.....	2	4	4	4	4	4
Mazandaran.....	2	6	6	6	6	6
Markazi.....	4	9	10	10	10	11
Hormozgan.....	1	5	5	4	4	4
Hamedan.....	1	3	5	7	5	5
Yazd.....	1	1	1	2	2	3

1. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company

**2.18. CUSTOMERS OF URBAN SEWAGE**

Ostan	The year 1390		The year 1391	
	Total subscribers	Household subscriber	Total subscribers	Household subscriber
<b>Total country</b> .....	<b>4247278</b>	<b>3896159</b>	<b>4683600</b>	<b>4269731</b>
East Azarbayejan .....	393974	364045	436694	401536
West Azarbayejan.....	252191	238837	265617	251551
Ardebil .....	75527	70010	91674	84358
Esfahan .....	507722	461324	537273	482538
Alborz.....	24029	21211	34037	30358
Ilam.....	41812	38854	45162	42278
Bushehr.....	24602	24050	27583	26859
Tehran .....	325535	305403	413025	383392
Chaharmahal&Bakhtiari.....	87155	81002	93352	86828
South Khorasan .....	27448	25866	33740	31678
Khorasan-e-Razavi .....	342256	285455	381109	321488
North Khorasan .....	33859	30227	40731	35907
Khuzestan .....	437089	391809	451024	403998
Zanjan.....	27402	25794	30693	28876
Semnan .....	26635	25582	33067	31799
Sistan&Baluchestan.....	33620	32867	41051	40298
Fars .....	173651	159830	191505	181027
Qazvin .....	103000	99541	124360	103751
Qom .....	34777	34196	39490	38858
Kordestan.....	218782	206899	244238	221913
Kerman .....	8238	7483	12664	11361
Kermanshah .....	293663	269395	304972	278481
Kohgiluyeh&Boyerahmad.....	15278	14475	20641	19348
Golestan.....	13460	12499	15767	14491
Gilan .....	219845	189115	226002	196609
Lorestan .....	141375	132592	147452	138458
Mazandaran .....	13040	12728	19771	19442
Markazi.....	114731	107539	123742	115166
Hormozgan .....	53388	48763	54905	49965
Hamedan.....	157244	154435	174339	171005
Yazd .....	25950	24333	27920	26114

**2.18. CUSTOMERS OF URBAN SEWAGE (continued)**

Ostan	The year 1392		The year 1393		The year 1394	
	Total subscribers	Household subscriber	Total subscribers	Household subscriber	Total subscribers	Household subscriber
<b>Total country</b> .....	<b>5456792</b>	<b>4980614</b>	<b>5743982</b>	<b>5219090</b>	<b>6109084</b>	<b>5526748</b>
East Azarbayejan .....	482885	441502	519041	467838	558518	504681
West Azarbayejan.....	278979	264182	312857	297218	326858	310424
Ardebil .....	105614	97201	119750	110356	129310	119375
Esfahan .....	561561	507504	588565	530868	611934	550526
Alborz .....	50771	46409	65432	60174	81810	75307
Ilam.....	48003	43633	52468	47756	56308	51378
Bushehr.....	29719	28871	32344	31332	34092	32970
Tehran .....	839622	775646	790862	737967	869620	785728
Chaharmahal&Bakhtiari.....	96427	89627	104960	97387	111713	103467
South Khorasan.....	38092	35715	41480	38824	43923	40766
Khorasan-e-Razavi .....	426753	364818	461304	373896	487169	398294
North Khorasan.....	45659	41054	48283	43355	49892	44682
Khuzestan .....	468059	419618	486621	436251	499826	448522
Zanjan.....	35171	33228	35850	33874	36299	34382
Semnan .....	38074	36645	40688	39148	45458	43624
Sistan&Baluchestan.....	45976	45223	47085	46332	50995	50117
Fars .....	203232	192656	217291	206180	217872	206833
Qazvin .....	139674	117056	151890	127724	159807	134469
Qom .....	44085	43277	56002	54179	67426	65044
Kordestan.....	259267	235889	276649	251330	291545	265696
Kerman .....	15640	14073	18080	16184	25207	22938
Kermanshah .....	314783	287565	324791	295641	330305	301155
Kohgiluyeh&Boyerahmad.....	22889	21469	22889	21469	28290	26456
Golestan.....	20438	18882	24757	22789	28107	25800
Gilan .....	240013	206180	249422	213537	257440	219074
Lorestan .....	156720	147210	175714	165548	201902	187665
Mazandaran .....	29734	29361	32495	31929	34633	33573
Markazi.....	132365	123025	138428	127755	146598	135099
Hormozgan .....	67223	59509	69335	61114	71391	62520
Hamedan.....	189499	185672	207941	202470	220277	213983
Yazd .....	29865	27914	30708	28665	34559	32200

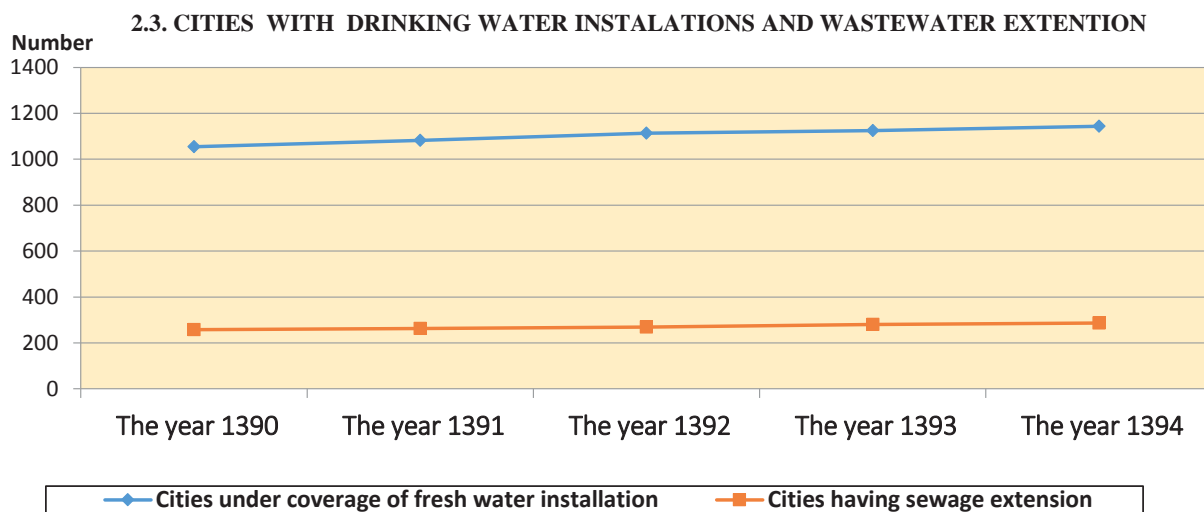
Source: National Water and Wastewater Engineering Company

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

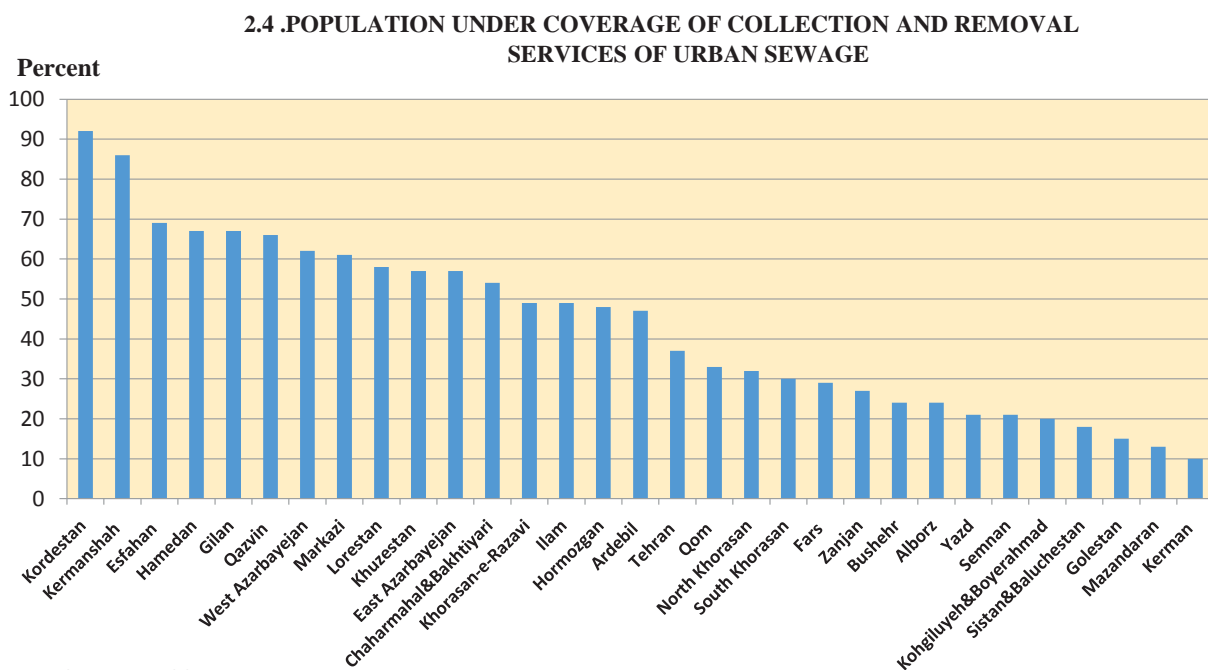
<i>Ostan</i>	The year 1385	The year 1390	The year 1391	The year 1392	The year 1393	The year 1393
<b>Total country</b> .....	<b>27</b>	<b>37</b>	<b>39</b>	<b>40</b>	<b>42</b>	<b>44</b>
East Azarbayejan.....	39	54	56	57	57	57
West Azarbayejan.....	41	56	58	59	61	62
Ardebil.....	27	41	41	48	47	47
Esfahan.....	43	58	59	61	62	69
Alborz.....	<sup>(1)</sup> 000	11	17	21	16	24
Ilam.....	29	38	45	45	46	49
Bushehr.....	19	23	23	23	24	24
Tehran.....	<sup>(1)</sup> 18	24	26	30	32	37
Chaharmahal&Bakhtiari.....	43	54	56	53	53	54
South Khorasan.....	21	28	35	35	30	30
Khorasan-e-Razavi.....	15	36	46	47	48	49
North Khorasan.....	21	28	29	30	31	32
Khuzestan.....	47	53	54	55	56	57
Zanjan.....	8	18	29	31	29	27
Semnan.....	11	14	16	18	19	21
Sistan&Baluchestan.....	8	12	17	17	17	18
Fars.....	11	24	26	27	28	29
Qazvin.....	41	55	66	67	68	66
Qom.....	14	20	22	24	28	33
Kordestan.....	75	97	99	91	91	92
Kerman.....	3	5	6	7	8	10
Kermanshah.....	52	64	66	65	65	86
Kohgiluyeh&Boyerahmad.....	13	18	20	23	23	20
Golestan.....	6	10	10	10	13	15
Gilan.....	54	62	63	65	68	67
Lorestan.....	40	54	56	56	55	58
Mazandaran.....	3	6	6	6	11	13
Markazi.....	36	52	53	53	54	61
Hormozgan.....	28	34	36	44	45	48
Hamedan.....	44	60	64	64	65	67
Yazd.....	7	12	16	17	20	21

1. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company



For data see Table 2.16.



For data see Table 2.19.

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

Ostan	The year 1385	The year 1390	The year 1391	The year 1392	The year 1393	The year 1394
<b>Total country.....</b>	<b>1938898</b>	<b>2863322</b>	<b>3021291</b>	<b>3492166</b>	<b>3848013</b>	<b>4242400</b>
East Azarbayejan .....	88428	207648	208548	254321	257622	283262
West Azarbayejan.....	121300	182430	194179	211078	223043	231530
Ardebil .....	28640	47124	49929	57968	91623	95612
Esfahan .....	390450	446526	451163	432192	427541	474923
Alborz.....	<sup>(1)</sup> 000	26897	35139	49893	61645	89443
Ilam.....	13400	21460	22598	25146	27224	28012
Bushehr.....	17850	35262	38046	37224	36377	41820
Tehran .....	<sup>(1)</sup> 495872	567088	572698	477321	367944	659753
Chaharmahal&Bakhtiyari ..	40256	45210	46448	47661	49277	52732
South Khorasan.....	4060	8024	9358	11336	10490	13119
Khorasan-e-Razavi .....	101370	159200	170925	274689	206370	221531
North Khorasan.....	10890	15200	16443	16469	16459	17741
Khuzestan .....	102090	130700	136244	518368	725611	768789
Zanjan.....	3100	14230	18287	20179	21219	30340
Semnan .....	900	6420	10609	15984	6233	10274
Sistan&Baluchestan.....	8620	13150	14569	20719	16793	17269
Fars .....	34112	129760	133873	143936	148211	154392
Qazvin .....	22360	75240	79327	76296	90868	52954
Qom .....	15620	53248	58249	65201	62400	69339
Kordestan.....	51260	75246	79843	142396	192393	179008
Kerman .....	1850	7122	9583	12254	15788	16983
Kermanshah .....	126854	163580	168018	174692	228427	261228
Kohgiluyeh&Boyerahmad..	1230	2841	2880	10548	10834	13388
Golestan.....	984	8500	9826	13574	18002	21812
Gilan .....	81254	120461	165768	129912	168786	179343
Lorestan .....	61258	88546	90331	28415	86921	10558
Mazandaran .....	5200	14200	15361	596	43973	33840
Markazi.....	34560	72121	74662	79222	89750	92699
Hormozgan .....	20150	40293	43628	47338	52792	55407
Hamedan.....	49560	76541	85177	84701	79021	49274
Yazd.....	5420	9054	9582	12537	14376	16025

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

Ostan	The year 1390		The year 1391		The year 1392	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
<b>Total country</b> .....	<b>42391</b>	<b>2390</b>	<b>46124</b>	<b>2678</b>	<b>48941</b>	<b>2752</b>
East Azarbayejan .....	2420	22	2621	50	2733	50
West Azarbayejan .....	2278	58	2371	59	2441	61
Ardebil .....	933	32	989	33	958	16
Esfahan .....	5941	363	6247	371	6526	383
Alborz .....	508	26	631	27	704	29
Ilam .....	683	15	698	22	711	23
Bushehr .....	455	48	462	48	467	48
Tehran .....	4671	80	5652	124	5942	115
Chaharmahal&Bakhtiyari ..	886	73	900	81	927	85
South Khorasan .....	308	20	365	20	408	20
Khorasan-e-Razavi .....	2830	290	3094	291	3375	287
North Khorasan .....	274	18	309	21	340	22
Khuzestan .....	3798	435	4648	568	5670	609
Zanjan .....	363	10	414	14	421	14
Semnan .....	303	18	374	25	396	26
Sistan&Baluchestan .....	459	16	493	24	555	30
Fars .....	2043	181	2019	184	2094	186
Qazvin .....	1028	49	1141	49	1174	49
Qom .....	672	8	712	13	737	14
Kordestan .....	1453	122	1461	130	1536	155
Kerman .....	351	11	412	11	462	11
Kermanshah .....	2645	232	2696	236	2724	239
Kohgiluyeh&Boyerahmad ..	235	30	253	30	255	31
Golestan .....	484	23	516	23	524	23
Gilan .....	644	45	664	52	669	52
Lorestan .....	1179	31	1262	33	1286	33
Mazandaran .....	593	18	629	18	656	18
Markazi .....	1345	31	1409	31	1440	31
Hormozgan .....	750	16	766	16	788	17
Hamedan .....	1233	49	1265	51	1282	53
Yazd .....	626	20	651	23	740	23

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

Ostan	The year 1393		The year 1394	
	Collection network	Transmission lines	Collection network	Transmission lines
<b>Total country</b> .....	<b>51147</b>	<b>2703</b>	<b>53334</b>	<b>2776</b>
East Azarbayejan.....	2879	50	3096	60
West Azarbayejan.....	2583	64	2709	66
Ardebil.....	1098	39	1125	44
Esfahan.....	6921	392	7231	407
Alborz.....	765	30	815	30
Ilam.....	764	24	806	24
Bushehr.....	473	48	492	48
Tehran.....	6515	124	6928	153
Chaharmahal&Bakhtiyari.....	977	85	1070	85
South Khorasan.....	427	22	452	22
Khorasan-e-Razavi.....	3558	300	3434	289
North Khorasan.....	359	23	374	26
Khuzestan.....	5309	592	5376	625
Zanjan.....	427	14	435	14
Semnan.....	421	27	462	27
Sistan&Baluchestan.....	614	30	654	30
Fars.....	2185	209	2322	212
Qazvin.....	1207	49	1230	49
Qom.....	803	15	841	15
Kordestan.....	1571	155	1600	134
Kerman.....	498	11	520	11
Kermanshah.....	2627	107	2704	110
Kohgiluyeh&Boyerahmad.....	255	31	285	21
Golestan.....	548	24	551	26
Gilan.....	679	53	687	53
Lorestan.....	1362	35	1430	35
Mazandaran.....	691	18	825	20
Markazi.....	1485	31	1552	31
Hormozgan.....	828	24	849	26
Hamedan.....	1325	56	1351	59
Yazd.....	994	23	1129	23

Source: National Water and Wastewater Engineering Company



**2.22. NUMBER OF SEWAGE TREATMENT PLANTS<sup>(1)</sup> IN INDUSTRIAL TOWNS AND REGIONS BY OSTAN**

Year and Ostan	In operation	Under construction	Under designing
1385.....	45	27	36
1390.....	129	33	40
1391.....	144	42	62
1392.....	156	37	59
1393.....	169	30	55
<b>1394.....</b>	<b>187</b>	<b>21</b>	<b>47</b>
East Azarbayejan .....	9	0	7
West Azarbayejan.....	8	1	2
Ardebil .....	5	0	0
Esfahan .....	12	1	5
Alborz.....	2	1	0
Ilam.....	2	0	2
Bushehr.....	2	0	0
Tehran .....	9	1	1
Chaharmahal&Bakhtiyari.....	4	0	3
South Khorasan.....	2	0	0
Khorasan-e-Razavi .....	8	0	1
North Khorasan.....	4	0	0
Khuzestan .....	6	4	0
Zanjan.....	4	1	0
Semnan .....	5	0	0
Sistan&Baluchestan.....	5	0	1
Fars .....	14	2	2
Qazvin .....	3	0	2
Qom .....	2	0	2
Kordestan.....	6	0	0
Kerman .....	8	0	0
Kermanshah .....	7	0	0
Kohgiluyeh&Boyerahmad.....	1	0	0
Golestan.....	11	0	2
Gilan .....	7	5	4
Lorestan .....	3	0	0
Mazandaran .....	13	2	3
Markazi.....	10	0	5
Hormozgan .....	3	0	0
Hamedan.....	8	1	2
Yazd .....	4	2	3

1. Statistics in tables in different years are accumulated.

Source: Ministry of Industry, Mine and Trade.

**2.23. AREA OF LANDSCAPE<sup>(1)</sup> IN INDUSTRIAL TOWNS AND REGION BY OSTAN (ha)**

Year and Ostan	Area of landscape
1385 .....	616
1390 .....	6165
1391 .....	6209
1392 .....	6604
1393 .....	6916
<b>1394.....</b>	<b>7336.5</b>
East Azarbayejan.....	299.3
West Azarbayejan .....	110.3
Ardebil .....	214.0
Esfahan .....	639.0
Alborz .....	105.9
Ilam .....	30.5
Bushehr .....	73.9
Tehran .....	786.9
Chaharmahal&Bakhtiyari .....	245.2
South Khorasan .....	152.5
Khorasan-e-Razavi.....	844.5
North Khorasan .....	31.3
Khuzestan .....	176.9
Zanjan .....	140.1
Semnan.....	548.2
Sistan&Baluchestan .....	281.2
Fars .....	520.7
Qazvin .....	168.0
Qom .....	316.7
Kordestan .....	48.5
Kerman .....	408.7
Kermanshah .....	222.7
Kohgiluyeh&Boyerahmad .....	80.0
Golestan .....	96.5
Gilan.....	116.5
Lorestan.....	27.0
Mazandaran.....	127.1
Markazi .....	235.1
Hormozgan.....	32.2
Hamedan .....	82.8
Yazd .....	174.3

1. Statistics in tables in different years are accumulated.

Source: Ministry of Industry, Mine and Trade.

**2.24. ENVIRONMENTAL CHARACTERISTICS OF HEALTH AND MEDICAL CENTRES**

Description	The year 1385	The year 1390	The year 1391	The year 1392	The year 1393	The year 1394
Percentage of hospitals with appropriate wings <sup>(1)</sup> .....	-	-	76.0	83.9	84.0	86.1
Percentage of rural households enjoying a hygienic sewage disposal system.....	<sup>(2)</sup> 96.0	<sup>(2)</sup> 96.0	<sup>(3)</sup> 63.8	<sup>(3)</sup> 67.0	69.0	72.7
Percentage of health and medical centres with appropriate conditions .....	77.0	71.0	75.0	77.4	81.0	81.4
Percentage of hospitals with appropriate solid waste management.....	69.0	79.0	74.0	78.7	80.0	84.0
Percentage of hospitals with appropriate wastewater management.....	76.0	73.0	74.0	75.4	75.0	74.3
Percentage of hospitals with appropriate kitchen and restaurant.....	78.0	83.0	78.0	78.6	78.0	78.2

1. This indicator has been created since the year 1391.

2. It was calculated based on the results of the National Population and Housing Census.

3. Revised figures.

Source: Ministry of Health, Treatment, and Medical Education.

