

### *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 1368 to the year 1390 and the statistics on forests, ranges, and deserts and the statistics on the amount of distributed fertilizers; and sold pesticides which were presented in the Chapter "Agriculture, Forestry, and Fisheries" of the Iran Statistical Yearbook, are presented in the Environment Chapter due to its closer relation with the environment sector since the year 1392. 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 minor sewage pipelines, including pipes and related accessories, with a profile appropriate to siphon or contractual capacity, which carries joint sewages away from the siphon to the private line or to the public network for collecting sewages.

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

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

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

**Public network for collection and transmission of sewage:** refers to all installations and equipment, such as main collectors, used for collection and transmission of sewage to water treatment house and pump houses of urban sewage and public side networks, all belonging to the Water and Sewage Company. The network is not responsible for 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 1396, the area of zones protected by the Iran Department of Environment was about 17735085 hectares of which the Ostans of Kerman with 2405944 hectares and Qom with 34177 hectares had the highest and lowest areas respectively. In this year a number of 1780 conflagrations happened in the forests and ranges which shows a decrease of 22.5 percent in comparison with the previous year.

In the year 1396, the average volume of collected wastewater was 4891631 cu m which shows an 11.1 percent rise compared to the year 1395. The Ostans of Khuzestan and Tehran with

16.6 percent and 16.4 percent had the most collected wastewater volume and the Ostans of Semnan and South Khorasan with 0.2 percent and 0.3 percent of total nation's wastewater had the lowest volumes, respectively.

In the year 1395, among the pollutant and greenhouse gases resulted from burning of fuels in transportation sector, CO<sub>2</sub> with 139148704 tons had the greatest portion; namely 92.5% 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 gasoline and the lowest one goes to the liquefied gas.

In the year 1396 about 49 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 2 percent rise compared to the previous year. The highest share of the population under the coverage of this network belongs to the Ostan of Kordestan with 95 percent and the lowest shares of the population under the coverage of this network belong to the Ostans Kerman with 11 percent.

In the year 1395, 90.3 percent of hospitals enjoyed appropriate solid waste management system; moreover, 77.6 percent of hospitals had appropriate sewage management system which shows a 6.3 and 3.3 percent increase 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 1396**

(hectare)

Ostan	Total		National park		Wildlife habitat	
	Number	Area	Number	Area	Number	Area
<b>Total country.....</b>	<b>284</b>	<b>17735085</b>	<b>31</b>	<b>2068450</b>	<b>46</b>	<b>5832889</b>
East Azarbayejan.....	14	594749	2	15914	1	89014
West zarbayejan.....	7	663324	1	541315	2	5757
Ardebil.....	4	136979	0	0	0	0
Esfahan.....	13	1243236	3	114254	5	828928
Alborz.....	1	72169	0	0	0	0
Ilam.....	6	153359	0	0	0	0
Bushehr.....	7	155307	2	68193	1	2082
Tehran.....	10	432642	3	55151	0	0
Chaharmahal & bakhtiyari.....	8	206527	1	4372	0	0
South Khorasan.....	11	194080	3	30542	1	69174
Khorasan-e-Razavi.....	28	1052313	1	35542	3	98777
North Khorasan.....	7	1873934	0	0	3	1602334
Khuzestan.....	15	687031	2	11594	2	331399
Zanjan.....	3	244164	0	0	1	29812
Semnan.....	8	2117191	3	550624	2	453458
Sistan & Baluchestan ..	9	886020	0	0	1	293031
Fars.....	12	1236229	3	255375	1	153721
Qazvin.....	3	119414	0	0	0	0
Qom.....	1	34177	0	0	0	0
Kordestan.....	5	191959	0	0	1	3292
Kerman.....	16	2405944	1	149982	4	1431743
Kermanshah.....	6	166371	0	0	1	41713
Kohgiluyeh& Boyerahmad.....	8	208699	1	25839	0	0
Golestan.....	4	138797	1	90960	0	0
Gilan.....	15	132608	1	3477	5	4172
Lorestan.....	5	177263	0	0	1	24824
Mazandaran.....	23	528625	2	36982	5	84981
Markazi.....	5	133625	0	0	2	27916
Hormozgan.....	16	700633	0	0	2	4378
Hamedan.....	6	62351	0	0	0	0
Yazd.....	8	785363	1	78334	2	252383

**2.1. NUMBER AND AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT  
AT THE END OF THE YEAR 1396 (continued) (hectare)**

Ostan	Protected zones <sup>(1)</sup>		National natural heritages	
	Number	Area	Number	Area
<b>Total country</b> .....	<b>169</b>	<b>9792801</b>	<b>38</b>	<b>40945</b>
East Azarbayejan.....	10	488352	1	1469
West zarbayejan.....	3	116250	1	2
Ardebil .....	2	129108	2	7871
Esfahan .....	4	300048	1	6
Alborz.....	1	72169	0	0
Ilam.....	4	151830	2	1529
Bushehr.....	2	77750	2	7282
Tehran .....	4	372996	3	4495
Chaharmahal & bakhtiyari.....	6	201742	1	413
North Khorasan.....	4	94280	3	85
Khorasan-e-Razavi .....	21	908243	3	9751
South Khorasan .....	4	271600	0	0
Khuzestan .....	10	343993	1	45
Zanjan .....	2	214352	0	0
Semnan .....	3	1113109	0	0
Sistan & Baluchestan .....	4	592757	4	232
Fars .....	8	827133	0	0
Qazvin.....	3	119414	0	0
Qom .....	1	34177	0	0
Kordestan .....	4	188667	0	0
Kerman .....	10	824219	1	0
Kermanshah.....	3	124641	2	17
Kohgiluyeh & Boyerahmad .....	7	182860	0	0
Golestan.....	3	47837	0	0
Gilan .....	5	124698	4	261
Lorestan .....	3	152438	1	1
Mazandaran .....	13	401139	3	5523
Markazi.....	2	105705	1	4
Hormozgan .....	13	694299	1	1956
Hamedan.....	6	62351	0	0
Yazd.....	4	454644	1	2

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

Source: Iran Department of Environment.

## 2.1 AREA OF ZONES PROTECTED BY IRAN DEPARTMENT OF ENVIRONMENT THE YEAR 1396



For Data See Table 2.1

**2.2. AREA OF FORESTS, RANGES AND DESERTS BY OSTAN, THE YEAR 1396 (hectare)**

Ostan	Forests	Ranges			Desert phenomena <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 .....	712033	6288092	6184	632226	5649682	1129364
Khorasan-e-Razavi .....	667341	6558356	304530	2147046	4106780	593620
North Khorasan .....	424740	1555206	112615	627244	815348	43279
Khuzestan .....	938326	2477691	571073	1353096	553522	521341
Zanjan .....	61113	1137060	240442	425301	471317	79931
Semnan .....	340168	3731083	210807	585093	2935183	5112294
Sistan & Baluchestan .....	370786	10648499	217096	908129	9523274	4804956
Fars .....	2218925	7319987	57706	1735276	5527005	669725
Qazvin.....	26871	853485	252550	430122	170813	29151
Qom .....	4149	723019	2498	34830	685691	176383
Kordestan.....	372307	1294397	437855	494212	362330	3354
Kerman .....	591823	8186300	81323	2214046	5890931	7860548
Kermanshah.....	528507	1188438	164352	476166	547920	25916
Kohgiluyeh & Boyerahmad..	795786	478812	63966	144418	270428	40427
Golestan .....	415221	862825	381317	401887	79621	26
Gilan .....	545576	244986	98843	131684	14459	1779
Lorestan .....	1226367	883505	146857	672209	64439	11741
Mazandaran .....	1006518	584711	357671	205068	21973	1086
Markazi.....	1548	1772951	465804	1140366	166781	73143
Hormozgan .....	1053745	4093342	712	210907	3881724	1515013
Hamedan.....	1441	665767	323505	283977	58285	26372
Yazd.....	107096	6518007	91623	1126795	5299589	5935725

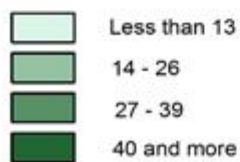
*1. Including salt desert, sand dunes, sand sheets, clay plain, salt lands, lands with no vegetation and exposed bedrock outcrops.*

*Source: Forests, Range and Watershed Management Organization.*

**2.2. RATIO OF FORESTS AREA TO THE AREA OF THE OSTANS, THE YEAR 1396**



**Percent**



For Data 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
1380 .....	801	369	432	7744	3184	4560
1385 .....	1237	611	626	11132	2752	8380
1390.....	1324	447	877	36972	23656	13316
1392.....	1897	657	1240	15134	3649	11485
1393.....	2016	1134	882	18828	6789	12039
1394.....	2088	887	1201	18480	4716	13764
1395.....	2298	905	1393	21512	8712	12800
<b>1396.....</b>	<b>1780</b>	<b>1179</b>	<b>601</b>	<b>9595</b>	<b>5869</b>	<b>3726</b>

Source: Forests, Range and Watershed Management Organization.

**2.4. VOLUME OF WOOD PRODUCTS UNDER JURISDICTION OF MANAGEMENT OF GENERAL DEPARTMENTS OF NATURAL RESOURCES OF NORTHERN FOREST AREAS**

Year	Log (1000 m <sup>3</sup> )	Sawn wood and sleepers (1000 m <sup>3</sup> )	Poles, pit props and pulpwood (1000 m <sup>3</sup> )	Fuel wood (1000 m <sup>3</sup> )	Charcoal (1000 tons)
1380 .....	328.0	87.00	245.00	504.00	6.00
1385 .....	285.0	50.00	209.00	295.00	1.00
1390.....	255.0	31.00	230.00	221.00	//
1392.....	233.0	31.00	205.00	197.00	//
1393.....	256.0	31.00	205.00	191.00	//
1394.....	201.0	26.00	166.00	162.00	//
1395.....	162.5	21.75	138.00	145.19	0.87
<b>1396.....</b>	<b>131.08</b>	<b>13.56</b>	<b>133.63</b>	<b>127.54</b>	<b>0.06</b>

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)
1380 .....	25	4290	34556	59610
1385.....	32	7349	31056	27724
1390.....	13	2569	8212	4748
1392.....	2	720	9990	843
1393.....	1	1163	13807	878
1394.....	17	1467	32134	2148
1395.....	7	536	11443	764
<b>1396.....</b>	<b>124</b>	<b>40577</b>	<b>48880</b>	<b>642</b>
East Azarbayejan.....	0	0	0	0
West Azarbayejan.....	0	0	210	0
Esfahan .....	2	0	2487	160
Alborz .....	0	0	3098	0
Ilam .....	0	0	2040	0
Bushehr .....	0	158	997	0
Tehran .....	0	0	812	0
South Khorasan .....	1	19	3505	0
Khorasan-e-Razavi.....	2	180	5638	0
North Khorasan.....	0	0	913	0
Khuzestan .....	0	0	14500	0
Semnan .....	1	60	3570	482
Sistan & Baluchestan .....	118	110	265	0
Fars .....	0	0	1409	0
Qazvin.....	0	0	1590	0
Qom.....	0	0	1035	0
Kerman .....	0	0	1235	0
Golestan .....	0	40000	1567	0
Markazi .....	0	50	1510	0
Hormozgan .....	0	0	970	0
Hamadan .....	0	0	529	0
Yazd .....	0	0	1000	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)
1380 .....	489	1650	468	0	703937	289
1385.....	230	4452	42	1087	816831	254
1390.....	72	0	23	518	408404	8000
1392.....	60	0	0	779	192233	9
1393.....	92	0	1	1493	247073	23
1394.....	77	605	17	336	210602	0
1395.....	29	7	318	808	693816	25
<b>1396.....</b>	<b>37</b>	<b>21416</b>	<b>290</b>	<b>1476</b>	<b>785346</b>	<b>78</b>
East Azarbayejan.....	0	0	0	0	0	0
West Azarbayejan .....	0	0	157	0	15000	0
Esfahan .....	0	500	0	0	66532	0
Alborz .....	0	0	0	0	8810	0
Ilam .....	0	370	0	0	0	0
Bushehr .....	0	0	0	0	0	0
Tehran .....	0	0	0	186	33040	0
South Khorasan .....	24	0	0	0	0	0
Khorasan-e-Razavi.....	13	0	0	0	392000	10
North Khorasan .....	0	0	0	0	6000	0
Khuzestan .....	0	15060	0	309	27000	25
Semnan .....	0	0	0	0	100000	20
Sistan & Baluchestan .....	0	600	0	0	0	0
Fars .....	0	0	0	0	0	0
Qazvin.....	0	0	0	0	0	20
Qom.....	0	236	50	960	5430	0
Kerman .....	0	3500	0	0	0	3
Golestan .....	0	0	83	0	5483	0
Markazi .....	0	0	0	21	125000	0
Hormozgan .....	0	1150	0	0	0	0
Hamadan .....	0	0	0	0	53	0
Yazd .....	0	0	0	0	998	0

1. Ostans not mentioned here have no activities in this field. Moreover, in Mazandaran province, the projects for combating desertification for 17 thousands hectares of lands have been developed.

Source: Forests, Range and Watershed Management Organization.

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

Description	Unit	1380	1385	1390	1392	1393	1394	1395	1396
<b><i>Range management and balance of livestock and range management<sup>(1)</sup></i></b>									
Cadastral survey, delineation and control of grazing permits.....	1000 ha	2666	3993	2439	601	1877	283	1112.50	755.0
Preparation of range management plans.....	1000 ha	1009	1531	462	2	36	38	16.00	525.0
Range and livestock grazing allotments .....	1000 ha	11059	59728	25732	10768	4641	4018	4562.00	4946.0
<b><i>Improvement and rehabilitation of rangelands<sup>(2)</sup></i></b>									
Improvement and rehabilitation of rangelands project .....	1000 ha	0	136	0	0	0	0	0.00	0.0
<b><i>Rehabilitation and restoration of rangelands<sup>(2)</sup></i></b>									
Transplanting seedlings.....	1000 ha	17	4	1	1	1	2	1.00	5.0
Direct seeding and hoeing ....	1000 ha	61	49	19	5	6	5	0.00	0.0
Fertilizer spreading on rangelands .....	1000 ha	17	29	9	3	1	2	0.20	16.0
Water harvesting .....	1000 ha	59	42	43	4	4	3	5.98	6.4
Providing water troughs .....	Set	1581	2105	1181	278	632	620	269.00	806.0
Drilling shallow wells .....	case	173	90	57	35	43	15	6.00	10.0
Installation of wind pumps...	Set	11	18	29	3	1	3	4.00	4.0
Seed production.....	Ton	468	390	1840	188	17	124	34.90	30.0
Restoration of pastures on degraded marginal lands .....	1000ha	11	12	4	1	1	1	2.00	1.5

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

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

Source: Forests, Range and Watershed Management Organization.

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

Year and Ostan	Total	Nitrogenous	Phosphate	Potash	Macro & micro elements
1380 .....	2919813	1761637	656242	213176	288758
1385.....	4574238	2511989	1244861	378162	439226
1390.....	1603623	1093827	315146	61900	132750
1392.....	1645379	1193247	443558	8574	0
1393.....	2193023	1402276	540089	250658	0
1394.....	1432288	1148765	212970	70553	0
1395.....	1690288	1438960	131941	119387	0
<b>1396.....</b>	<b>1590614</b>	<b>1125689</b>	<b>344308</b>	<b>120617<sup>(2)</sup></b>	<b>0</b>
East Azarbayejan.....	57089	39840	14245	3004	0
West Azarbayejan .....	61290	44077	14564	2650	0
Ardebil .....	56002	45851	9036	1114	0
Esfahan .....	41783	32934	6271	2578	0
Alborz .....	12255	7386	3469	1400	0
Ilam .....	33041	21853	8794	2395	0
Bushehr .....	7451	1751	2501	3199	0
Tehran .....	28440	20233	6809	1398	0
Chaharmahal & Bakhtiyari .	20120	15073	3671	1375	0
South Khorasn .....	9479	4704	2815	1960	0
Khorasan-e-Razavi.....	116647	85241	21401	10005	0
North Khorasn .....	24916	16387	6693	1836	0
Khuzestan .....	218609	152024	49945	16640	0
Zanjan .....	39108	27631	8998	2478	0
Semnan .....	16566	12099	2818	1649	0
Sistan & Baluchestan .....	20536	15995	3937	604	0
Fars.....	74972	62637	9284	3051	0
Qazvin .....	42452	30803	9249	2401	0
Qom.....	11019	7518	3001	500	0
Kordestan .....	53775	37038	15046	1691	0
Kerman <sup>(1)</sup> .....	73569	54719	10673	8179	0
Kermanshah .....	84708	54659	25754	4295	0
Kohgiluyeh & Boyerahmad	21329	16914	3363	1052	0
Golestan .....	120508	82886	30244	7378	0
Gilan .....	51257	37006	8273	5979	0
Lorestan .....	54573	41772	12101	700	0
Mazandaran .....	90085	69559	14807	5719	0
Markazi .....	43841	29101	12249	2490	0
Hormozgan.....	9998	8167	1336	494	0
Hamedan .....	65832	40920	21078	3834	0
Yazd .....	13696	8913	1883	2900	0

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

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

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
1380 .....	25578	8663 <sup>(2)</sup>	1134	2813	7211	122	65	5537	33
1385 .....	20894	3917 <sup>(2)</sup>	240	3285	9971	5	0	3394	82
1390 .....	3574	162	30	188	1181	0	0	2004	9
1392 .....	724	6	0	27	94	0	0	449	148
1393 .....	1195	49	0	49	292	0	0	801	4
1394 .....	997	57	46	0	45	0	0	830	19
1395 .....	1241	66	178	9	39	0	0	947	2
<b>1396.....</b>	<b>1801</b>	<b>141</b>	<b>10</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1645</b>	<b>0</b>

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

2. Including tablets.

Source: Agricultural Support Services Company.

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

Description	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
1390 <sup>(1)</sup> .....	56108	73398	355	12363	24503	11252134	579	3808
1391 <sup>(1)</sup> .....	53327	54986	339	13035	23305	11093879	557	3622
1392 <sup>(1)</sup> .....	53479	55081	339	12670	23375	11724349	570	3634
1393 <sup>(1)</sup> .....	47308	48766	300	10761	20665	8381339	469	3210
1394 <sup>(1)</sup> .....	43171	51959	270	9540	18885	12522887	566	3447
<b>1395.....</b>	<b>43483</b>	<b>44795</b>	<b>275</b>	<b>9594</b>	<b>19000</b>	<b>11966481</b>	<b>507</b>	<b>2959</b>
Motor spirit .....	3	0	0	83	0	564	1	//
Burning oil .....	8	39	0	13	0	42445	2	//
Gas oil .....	43418	44503	271	9498	18995	7646070	428	2951
Fuel oil .....	54	253	4	0	5	17437	1	//
Natural gas .....	000	000	000	000	000	4259965	76	8

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	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
1390 <sup>(1)</sup> .....	166844	224066	3178	26406	17134	92673799	2059	281
1391 <sup>(1)</sup> .....	169950	211052	3125	20138	17437	95014395	2096	283
1392 <sup>(1)</sup> .....	168701	199796	2950	18780	17363	95062597	2085	280
1393 <sup>(1)</sup> .....	173883	171338	2550	23107	18076	99706066	2111	274
1394 <sup>(1)</sup> .....	156499	103986	1491	21650	15897	94088218	1918	237
<b>1395.....</b>	<b>162488</b>	<b>101396</b>	<b>1438</b>	<b>23981</b>	<b>16712</b>	<b>98693387</b>	<b>2002</b>	<b>247</b>
Motor sprit .....	696	77	0	18043	67	122643	5	1
Burning oil .....	5	24	0	8	0	26040	1	//
Gas oil .....	13131	41231	525	525	3939	7399804	300	60
Fuel oil .....	12738	59786	913	5	1274	4113285	159	32
Liquefied gas .....	0	0	0	1	0	1189	//	//
Natural gas .....	135918	278	0	5399	11432	85847436	1530	153
Coke gas .....	000	0000	000	000	000	168537	4	//
Blast furnace gas .....	000	000	000	000	000	1014453	4	//

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	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	0	0
1390 <sup>(1)</sup> .....	904296	497370	5863	7813502	317975	130462725	44168	5955
1391 <sup>(1)</sup> .....	922145	483658	5616	8315036	320542	133107930	45416	5763
1392 <sup>(1)</sup> .....	951343	511546	6001	8903585	323873	142624129	47082	6148
1393 <sup>(1)</sup> .....	510587	282380	6908	8923064	329752	138587918	48601	6317
1394 <sup>(1)</sup> .....	927532	560209	6836	9207323	298123	146365781	49731	6412
<b>1395 .....</b>	<b>911028</b>	<b>402792</b>	<b>4402</b>	<b>9708013</b>	<b>276858</b>	<b>139148704</b>	<b>52058</b>	<b>6724</b>
Motor sprit .....	368162	40906	0	9544934	35452	64879152	30895	2996
Gas oil .....	487893	303577	3614	130104	238526	50915850	2688	3531
Liquefied gas .....	000	000	000	000	000	109068	159	5
Natural gas .....	000	000	000	000	000	16543101	18283	59
Fuel oil .....	6018	28245	431	2	602	1943299	000	000
Jet fuel (JP4) .....	776	86	0	20125	2203	137561	1	4
Jet oil fuel (ATK) .....	48179	29978	357	12848	75	4620672	32	129
<b><i>Road and marine transportation</i></b>								
1385 .....	813084	326264	3433	9466815	254052	107402790	0	0
1390 <sup>(1)</sup> .....	857720	468901	5526	7775431	295597	125839202	44088	5481
1391 <sup>(1)</sup> .....	875165	454900	5275	8278732	297938	128444515	45332	5263
1392 <sup>(1)</sup> .....	902468	481509	5645	8871761	300266	137789471	46994	5622
1393 <sup>(1)</sup> .....	456776	249371	6516	8884943	303808	133249808	48501	5711
1394 <sup>(1)</sup> .....	861425	519440	6351	9171441	266082	139778930	49569	5386
<b>1395 .....</b>	<b>837597</b>	<b>357506</b>	<b>3864</b>	<b>9668185</b>	<b>262619</b>	<b>131837572</b>	<b>51882</b>	<b>5605</b>
Motor sprit .....	368149	40905	0	9544602	35451	64879152	30895	2996
Gas oil .....	463430	288356	3433	123581	226566	48362951	2545	2545
Liquefied gas .....	000	000	000	000	000	109068	159	5
Natural gas .....	000	000	000	000	000	16543101	18283	59
Fuel oil .....	6018	28245	431	2	602	1943299	000	000

**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><i>Railway transportation</i></b>								
1385 .....	8200	5102	61	2192	4009	804228	0	0
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
1393 .....	12236	7614	91	3263	5982	1276964	72	493
1394 .....	22520	14012	167	6005	11010	2350110	132	907
<b>1395 .....</b>	<b>24463</b>	<b>15221</b>	<b>181</b>	<b>6523</b>	<b>11960</b>	<b>2552899</b>	<b>143</b>	<b>985</b>
Gas oil.....	24463	15221	181	6523	11960	2552899	143	985
<b><i>Air transportation</i></b>								
1385 .....	32561	19565	231	43565	15385	3293955	0	0
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
1393 .....	41575	25395	301	34858	19962	4061147	28	114
1394 .....	43587	26757	318	29877	21031	4236740	30	119
<b>1395 .....</b>	<b>48968</b>	<b>30065</b>	<b>357</b>	<b>33305</b>	<b>2279</b>	<b>4758234</b>	<b>33</b>	<b>133</b>
Jet fuel (JP4).....	776	86	0	20125	2203	137561	1	4
Jet oil fuel (ATK).....	48179	29978	357	12848	75	4620672	32	129
Motor spirit.....	13	1	0	332	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	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
1390 <sup>(1)</sup> .....	115846	55582	536	47847	11475	136143460	3845	495
1391 <sup>(1)</sup> .....	105412	43764	454	47155	10392	128099549	4078	532
1392 <sup>(1)</sup> .....	120754	69010	851	46817	11857	139156298	4286	549
1393 <sup>(1)</sup> .....	117284	46256	532	50131	11384	138289994	4209	530
1394 <sup>(1)</sup> .....	125200	68045	871	48306	12280	142122584	4285	540
<b>1395</b> .....	<b>127671</b>	<b>38418</b>	<b>429</b>	<b>52083</b>	<b>12448</b>	<b>149008521</b>	<b>4348</b>	<b>534</b>
Motor spirit .....	776	86	0	20129	75	136823	6	1
Burning oil .....	1507	7231	0	2350	0	7845758	327	65
Gas oil .....	4938	15504	198	198	988	2782464	113	23
Fuel oil .....	3218	15104	231	1	322	1039139	40	8
Liquefied gas .....	1388	30	0	13882	0	6373175	101	10
Natural gas .....	115844	463	0	15523	11063	125263896	2233	223
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	2585	1	//

1. Revised figures.

Source: Ministry of Energy.

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

Description	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	0	0	0
1390 .....	000	000	000	000	000	14915289	314	39
1391 .....	000	000	000	000	000	16573458	354	45
1392 .....	000	000	000	000	000	27052693	531	62
1393 .....	000	000	000	000	000	24211800	476	55
1394 .....	000	000	000	000	000	15055261	302	36
<b>1395</b> .....	<b>000</b>	<b>000</b>	<b>000</b>	<b>000</b>	<b>000</b>	<b>15296031</b>	<b>322</b>	<b>40</b>
Gas oil .....	000	000	000	000	000	453418	18	4
Fuel oil .....	000	000	000	000	000	1610276	62	12
Natural gas .....	000	000	000	000	000	8753535	156	16
Refinery gas .....	000	000	000	000	000	3861028	75	8
Liquefied gas .....	000	000	000	000	000	617774	10	1

Source: Ministry of Energy.

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

Description	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	0
1390 .....	634884	709408	5130	148500	30724	165184877	4087	666
1391 .....	629392	823623	5319	161831	31957	174664087	4273	698
1392 <sup>(1)</sup> .....	678024	910658	6574	162707	36199	179825215	4725	803
1393 .....	651610	627934	4586	177660	31105	177744913	4243	654
1394 .....	627724	437381	4158	162624	30330	174010543	4201	630
<b>1395 .....</b>	<b>641280</b>	<b>295919</b>	<b>2480</b>	<b>160434</b>	<b>25155</b>	<b>171686990</b>	<b>3622</b>	<b>485</b>
<b>Ministry of Energy</b>								
Gas oil.....	18488	11173	320	688	1326	3976955	152	30
Natural gas.....	201131	0	0	79405	5624	51448677	903	90
Fuel oil.....	34082	215537	969	59628	4055	16142656	508	102
<b>Private sector</b>								
Gas oil.....	96650	39960	1086	1304	4508	13039145	516	103
Natural gas.....	272571	0	0	16907	8706	78315333	1398	140
Fuel oil.....	4445	29124	102	35	428	1665332	54	11
<b>large industries</b>								
Gas oil.....	71	125	2	13	10	25709	1	//
Natural gas.....	13842	0	0	2454	497	4489492	80	8
Coke gas <sup>(2)</sup> .....	000	000	000	000	000	7154	//	//
Blast furnace gas <sup>(2)</sup> .....	000	000	000	000	000	2576537	10	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 1395** (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>641280</b>	<b>295919</b>	<b>2480</b>	<b>160434.00</b>	<b>25155</b>	<b>171686990</b>	<b>3622</b>	<b>485.0</b>
<b>Ministry of Energy</b>								
Thermal plant.....	146857	216484	984	135680.00	7121	43418047	997	151.0
Gas power plant.....	44124	7617	201	1782.00	2322	17729769	334	43.0
Combined cycle .....	62650	2399	100	2260.00	1550	10382792	230	28.0
Diesel power plant.....	70	210	3	0.05	13	37681	2	0.3
<b>Private sector</b>								
Thermal plant.....	44679	29402	107	11207.00	1859	15247829	283	34.0
Gas power plant.....	84961	23174	508	2731.00	5609	39451113	804	105.0
Combined cycle .....	244026	16508	573	4308.00	6173	38320869	882	115.0
large industries.....	13913	125	2	2467.00	507	7098892	91	9.0

Source: Ministry of Energy.

**2.16. COVERAGE OF URBAN SEWAGE EXTENSION**

Ostan	The year 1390		The year 1392		The year 1393	
	Cities under coverage of fresh water installation	Cities with sewage extensi	Cities under coverage of fresh water installation	Cities with sewage extensi	Cities under coverage of fresh water installation	Cities with sewage extensi
<b>Total country.....</b>	<b>1055</b>	<b>258</b>	<b>1113</b>	<b>269</b>	<b>1125</b>	<b>280</b>
East Azarbayejan .....	57	12	57	12	58	12
West Azarbayejan.....	38	10	38	10	38	11
Ardebil .....	23	7	23	8	23	8
Esfahan .....	97	27	104	28	105	31
Alborz.....	17	4	19	7	19	7
Ilam.....	19	4	19	4	19	4
Bushehr.....	16	3	32	3	33	3
Tehran .....	41	7	41	8	41	8
Chaharmahal & Bakhtiari.....	26	7	34	6	34	8
South Khorasan.....	19	1	21	1	21	1
Khorasan-e-Razavi .....	71	5	74	5	74	7
North Khorasan.....	18	2	18	2	18	2
Khuzestan .....	63	18	62	17	62	17
Zanjan.....	18	2	19	2	19	2
Semnan .....	17	5	18	6	19	6
Sistan & Baluchestan.....	36	2	37	3	37	4
Fars .....	79	6	78	7	81	7
Qazvin .....	26	10	26	13	26	14
Qom .....	2	1	6	1	6	1
Kordestan.....	23	19	24	17	24	18
Kerman .....	63	2	67	2	69	2
Kermanshah .....	27	27	27	27	27	27
Kohgiluyeh & Boyerahmad....	12	2	15	3	15	3
Golestan.....	21	4	22	4	22	4
Gilan .....	48	33	48	33	48	33
Lorestan .....	23	7	23	7	24	7
Mazandaran .....	46	7	52	7	52	7
Markazi.....	29	7	28	8	30	8
Hormozgan .....	33	4	36	5	36	5
Hamedan.....	29	11	29	11	29	11
Yazd .....	18	2	16	2	16	2

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

Ostan	The year 1394		The year 1395		The year 1396	
	Cities under coverage of fresh water installation	Cities with sewage extensi	Cities under coverage of fresh water installation	Cities with sewage extensi	Cities under coverage of fresh water installation	Cities with sewage extensi
<b>Total country.....</b>	<b>1144</b>	<b>286</b>	<b>1154</b>	<b>295</b>	<b>1167</b>	<b>316</b>
East Azarbayejan.....	58	12	60	12	61	14
West Azarbayejan.....	38	11	38	11	38	11
Ardebil .....	26	8	26	9	26	9
Esfahan .....	104	31	104	31	104	34
Alborz.....	19	7	19	10	19	10
Ilam.....	19	4	19	5	19	5
Bushehr.....	33	3	33	3	32	3
Tehran .....	41	8	41	8	45	18
Chaharmahal & Bakhtiyari.....	38	8	39	9	39	12
South Khorasan .....	21	1	24	1	24	1
Khorasan-e-Razavi .....	74	8	74	8	74	8
North Khorasan .....	21	2	21	2	21	3
Khuzestan .....	62	17	62	17	62	17
Zanjan.....	21	3	21	4	21	4
Semnan .....	19	6	19	6	19	6
Sistan & Baluchestan.....	37	4	37	4	37	4
Fars .....	81	8	83	8	82	8
Qazvin .....	26	14	26	14	26	14
Qom .....	6	1	6	1	6	1
Kordestan .....	24	18	24	18	27	18
Kerman .....	69	2	69	2	71	3
Kermanshah .....	28	28	28	27	28	26
Kohgiluyeh & Boyerahmad.....	15	3	15	3	16	3
Golestan.....	22	4	22	4	22	4
Gilan.....	50	34	50	35	50	36
Lorestan.....	24	7	24	7	24	7
Mazandaran.....	54	7	57	7	58	8
Markazi.....	33	8	32	8	33	8
Hormozgan .....	36	6	36	6	36	6
Hamedan.....	29	11	29	12	29	12
Yazd .....	16	2	16	3	18	3

Source: National Water and Wastewater Engineering Company.

## 2.17. NUMBER OF WASTEWATER-TREATMENT PLANTS

Ostan	Year						
	1385	1390	1392	1393	1394	1395	1396
<b>Total country.....</b>	<b>90</b>	<b>137</b>	<b>150</b>	<b>156</b>	<b>164</b>	<b>182</b>	<b>203</b>
East Azarbayejan .....	5	7	9	9	9	10	11
West Azarbayejan.....	4	7	7	7	8	9	10
Ardebil .....	3	3	3	3	3	4	4
Esfahan .....	16	21	21	24	24	25	27
Alborz.....	000 <sup>(1)</sup>	1	1	1	1	4	4
Ilam.....	3	4	4	4	4	5	5
Bushehr.....	2	3	3	3	3	3	3
Tehran .....	9 <sup>(1)</sup>	10	9	13	13	14	23
Chaharmahal & Bakhtiyari.....	4	5	5	5	5	6	6
South Khorasan.....	1	1	1	1	1	1	1
Khorasan-e-Razavi .....	5	7	7	7	10	12	13
North Khorasan.....	1	2	2	2	2	2	2
Khuzestan .....	4	6	6	7	7	8	8
Zanjan.....	2	2	2	2	2	3	3
Semnan .....	2	3	3	3	3	5	5
Sistan & Baluchestan.....	1	2	3	2	2	2	3
Fars .....	2	2	4	3	4	4	4
Qazvin .....	3	4	4	4	4	6	6
Qom .....	1	2	2	2	3	3	3
Kordestan.....	1	3	3	4	5	5	6
Kerman .....	1	1	1	2	1	1	3
Kermanshah .....	5	7	7	7	7	7	7
Kohgiluyeh & Boyerahmad.....	1	1	2	2	2	3	3
Golestan.....	2	3	4	4	4	4	4
Gilan .....	1	2	4	4	4	4	4
Lorestan .....	2	4	4	4	4	4	4
Mazandaran .....	2	6	6	6	6	6	6
Markazi.....	4	9	10	10	11	11	11
Hormozgan .....	1	5	4	4	4	4	6
Hamedan.....	1	3	7	5	5	5	6
Yazd.....	1	1	2	2	3	2	2

1. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company.

**2.18. CUSTOMERS OF URBAN SEWAGE**

Ostan	The year 1390		The year 1392		The year 1393	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
<b>Total country .....</b>	<b>4247278</b>	<b>3896159</b>	<b>5456792</b>	<b>4980614</b>	<b>5743982</b>	<b>5219090</b>
East Azarbayejan.....	393974	364045	482885	441502	519041	467838
West Azarbayejan .....	252191	238837	278979	264182	312857	297218
Ardebil .....	75527	70010	105614	97201	119750	110356
Esfahan .....	507722	461324	561561	507504	588565	530868
Alborz.....	24029	21211	50771	46409	65432	60174
Ilam .....	41812	38854	48003	43633	52468	47756
Bushehr .....	24602	24050	29719	28871	32344	31332
Tehran .....	325535	305403	839622	775646	790862	737967
Chaharmahal & Bakhtiari .....	87155	81002	96427	89627	104960	97387
South Khorasan .....	27448	25866	38092	35715	41480	38824
Khorasan-e-Razavi.....	342256	285455	426753	364818	461304	373896
North Khorasan .....	33859	30227	45659	41054	48283	43355
Khuzestan .....	437089	391809	468059	419618	486621	436251
Zanjan.....	27402	25794	35171	33228	35850	33874
Semnan.....	26635	25582	38074	36645	40688	39148
Sistan & Baluchestan .....	33620	32867	45976	45223	47085	46332
Fars .....	173651	159830	203232	192656	217291	206180
Qazvin .....	103000	99541	139674	117056	151890	127724
Qom .....	34777	34196	44085	43277	56002	54179
Kordestan .....	218782	206899	259267	235889	276649	251330
Kerman .....	8238	7483	15640	14073	18080	16184
Kermanshah .....	293663	269395	314783	287565	324791	295641
Kohgiluyeh & Boyerahmad .....	15278	14475	22889	21469	22889	21469
Golestan .....	13460	12499	20438	18882	24757	22789
Gilan.....	219845	189115	240013	206180	249422	213537
Lorestan.....	141375	132592	156720	147210	175714	165548
Mazandaran.....	13040	12728	29734	29361	32495	31929
Markazi .....	114731	107539	132365	123025	138428	127755
Hormozgan.....	53388	48763	67223	59509	69335	61114
Hamedan .....	157244	154435	189499	185672	207941	202470
Yazd .....	25950	24333	29865	27914	30708	28665

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

Ostan	The year 1394		The year 1395		The year 1396	
	Total customers	Household customers	Total customers	Household customers	Total customers	Household customers
<b>Total country .....</b>	<b>6109084</b>	<b>5526748</b>	<b>6491495</b>	<b>5863674</b>	<b>7166860</b>	<b>6528634</b>
East Azarbayejan.....	558518	504681	610224	546310	672459	600836
West Azarbayejan .....	326858	310424	347996	330563	360751	342574
Ardebil .....	129310	119375	140493	128204	151045	139074
Esfahan .....	611934	550526	635946	571401	660696	591713
Alborz.....	81810	75307	93370	87475	102134	93623
Ilam .....	56308	51378	59690	54475	64347	58464
Bushehr .....	34092	32970	37306	35911	65245	60851
Tehran .....	869620	785728	937564	851533	974037	885054
Chaharmahal & Bakhtiari .....	111713	103467	125196	113171	131691	118930
South Khorasan .....	43923	40766	47209	43723	51175	47338
Khorasan-e-Razavi .....	487169	398294	520606	430267	813870	752907
North Khorasan .....	49892	44682	51879	45617	54993	48391
Khuzestan .....	499826	448522	512951	460316	528087	473574
Zanjan.....	36299	34382	43068	40905	50302	47913
Semnan.....	45458	43624	51482	49105	56960	54308
Sistan & Baluchestan .....	50995	50117	51201	48754	54376	51727
Fars .....	217872	206833	232256	220127	251717	237895
Qazvin .....	159807	134469	169501	143341	174814	148041
Qom .....	67426	65044	78731	76004	87898	85518
Kordestan .....	291545	265696	302879	276111	333704	305060
Kerman .....	25207	22938	28780	26227	32233	29655
Kermanshah .....	330305	301155	333713	304079	340649	309038
Kohgiluyeh & Boyerahmad .....	28290	26456	34267	31555	40952	37434
Golestan .....	28107	25800	29996	27443	32067	29154
Gilan.....	257440	219074	262805	223533	271766	230341
Lorestan.....	201902	187665	213191	191169	223345	200623
Mazandaran.....	34633	33573	38321	37043	43919	40787
Markazi .....	146598	135099	159015	146528	166613	153897
Hormozgan.....	71391	62520	74554	64965	78435	68252
Hamedan .....	220277	213983	230677	223827	242702	234613
Yazd .....	34559	32200	36628	33992	53878	51049

Source: National Water and Wastewater Engineering Company.



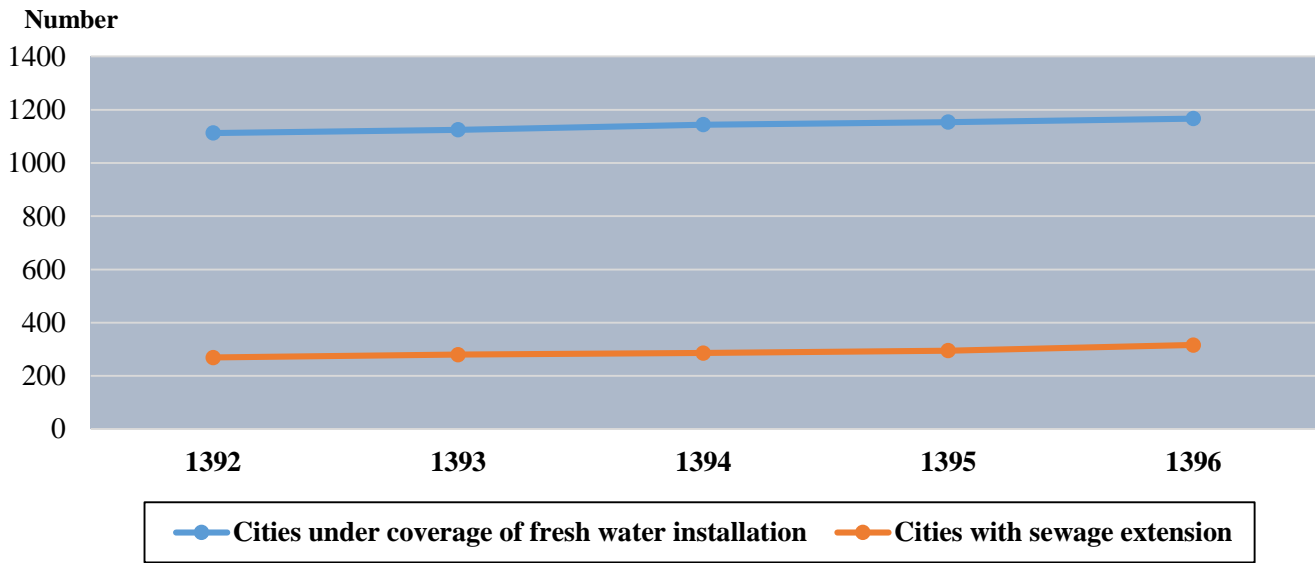
### 2.19. POPULATION UNDER COVERAGE OF COLLECTION AND REMOVAL SERVICES OF URBAN SEWAGE (percent)

Ostan	Year						
	1385	1390	1392	1393	1394	1395	1396
<b>Total country</b> .....	<b>27</b>	<b>37</b>	<b>40</b>	<b>42</b>	<b>44</b>	<b>47</b>	<b>49</b>
East Azarbayejan .....	39	54	57	57	57	60	64
West Azarbayejan.....	41	56	59	61	62	63	64
Ardebil .....	27	41	48	47	47	49	51
Esfahan .....	43	58	61	62	69	64	66
Alborz.....	000 <sup>(1)</sup>	11	21	16	24	28	31
Ilam.....	29	38	45	46	49	49	51
Bushehr.....	19	23	23	24	24	25	27
Tehran .....	18 <sup>(1)</sup>	24	30	32	37	42	45
Chaharmahal & Bakhtiari.....	43	54	53	53	54	53	55
South Khorasan.....	21	28	35	30	30	30	37
Khorasan-e-Razavi .....	15	36	47	48	49	53	55
North Khorasan.....	21	28	30	31	32	34	31
Khuzestan .....	47	53	55	56	57	61	61
Zanjan .....	8	18	31	29	27	31	34
Semnan .....	11	14	18	19	21	23	24
Sistan & Baluchestan.....	8	12	17	17	18	19	23
Fars .....	11	24	27	28	29	35	39
Qazvin .....	41	55	67	68	66	62	63
Qom .....	14	20	24	28	33	34	30
Kordestan.....	75	97	91	91	92	92	95
Kerman .....	3	5	7	8	10	11	11
Kermanshah .....	52	64	65	65	86	86	87
Kohgiluyeh & Boyerahmad.....	13	18	23	23	20	28	31
Golestan.....	6	10	10	13	15	16	16
Gilan .....	54	62	65	68	67	68	70
Lorestan .....	40	54	56	55	58	58	57
Mazandaran .....	3	6	6	11	13	11	12
Markazi.....	36	52	53	54	61	62	64
Hormozgan .....	28	34	44	45	48	51	56
Hamedan.....	44	60	64	65	67	71	72
Yazd.....	7	12	17	20	21	23	39

1. The statistics for Alborz are included with Tehran.

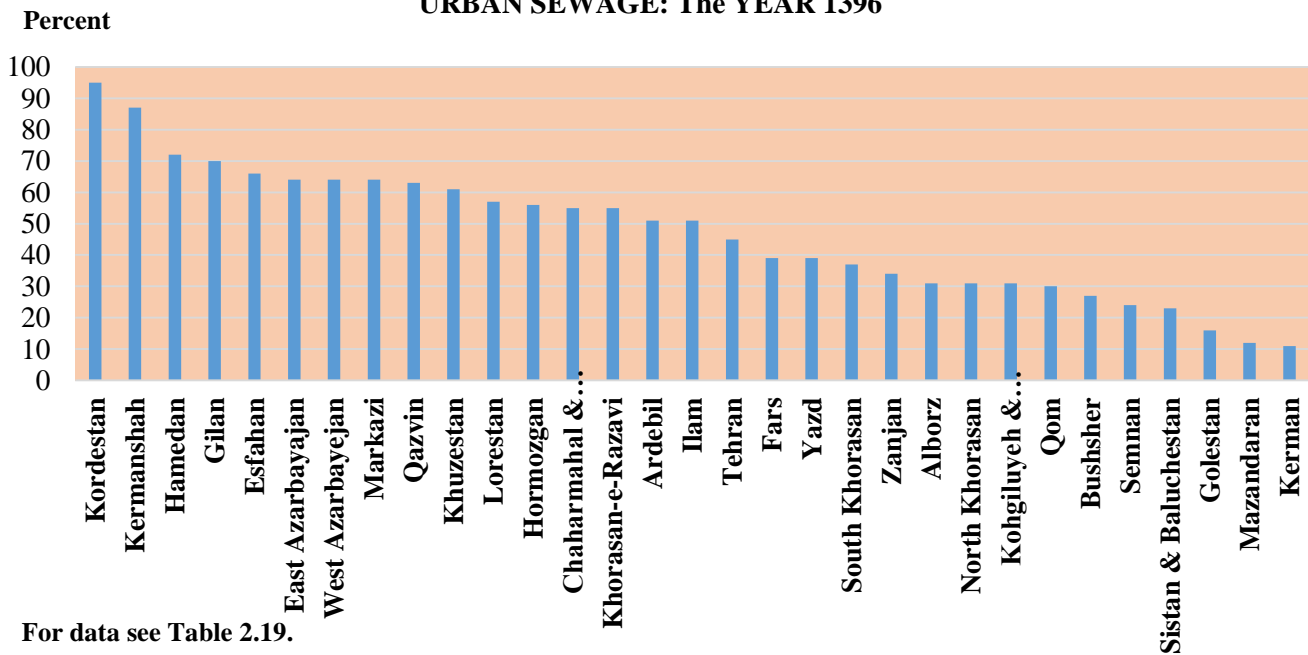
Source: National Water and Wastewater Engineering Company

**2.3 CITIES WITH DRINKING WATER INSTALATIONS AND WASTEWATER EXTENTION**



For data see Table 2.16.

**2.4 .POPULATION UNDER COVERAGE OF COLLECTION AND REMOVAL SERVICES OF URBAN SEWAGE: The YEAR 1396**



For data see Table 2.19.

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

Ostan	Year						
	1385	1390	1392	1393	1394	1395	1396
<b>Total country.....</b>	<b>1938898</b>	<b>2863322</b>	<b>3492166</b>	<b>3848013</b>	<b>4242400</b>	<b>4401032</b>	<b>4891631</b>
East Azarbayejan .....	88428	207648	254321	257622	283262	274707	324332
West Azarbayejan.....	121300	182430	211078	223043	231530	243865	254373
Ardebil .....	28640	47124	57968	91623	95612	97418	76031
Esfahan .....	390450	446526	432192	427541	474923	482765	453791
Alborz..... <sup>(1)</sup>	000	26897	49893	61645	89443	113241	128918
Ilam.....	13400	21460	25146	27224	28012	29848	33857
Bushehr.....	17850	35262	37224	36377	41820	44747	49457
Tehran .....	495872 <sup>(1)</sup>	567088	477321	367944	659753	801166	802295
Chaharmahal & Bakhtiari	40256	45210	47661	49277	52732	55256	58382
South Khorasan.....	4060	8024	11336	10490	13119	12895	15016
Khorasan-e-Razavi .....	101370	159200	274689	206370	221531	227268	281454
North Khorasan.....	10890	15200	16469	16459	17741	18827	19163
Khuzestan .....	102090	130700	518368	725611	768789	579329	810433
Zanjan .....	3100	14230	20179	21219	30340	31858	31527
Semnan .....	900	6420	15984	6233	10274	10905	11072
Sistan & Baluchestan.....	8620	13150	20719	16793	17269	17591	16727
Fars .....	34112	129760	143936	148211	154392	165658	178147
Qazvin .....	22360	75240	76296	90868	52954	97099	101141
Qom .....	15620	53248	65201	62400	69339	63022	63884
Kordestan.....	51260	75246	142396	192393	179008	192380	196412
Kerman .....	1850	7122	12254	15788	16983	17918	22331
Kermanshah .....	126854	163580	174692	228427	261228	234976	223230
Kohgiluyeh & Boyerahmad.....	1230	2841	10548	10834	13388	20822	23080
Golestan.....	984	8500	13574	18002	21812	24171	26646
Gilan .....	81254	120461	129912	168786	179343	176189	191066
Lorestan .....	61258	88546	28415	86921	10558	85471	159362
Mazandaran .....	5200	14200	596	43973	33840	48041	44144
Markazi.....	34560	72121	79222	89750	92699	98914	115137
Hormozgan .....	20150	40293	47338	52792	55407	54616	71071
Hamedan.....	49560	76541	84701	79021	49274	60791	87743
Yazd.....	5420	9054	12537	14376	16025	19278	21409

1. The statistics for Alborz are included with Tehran.

Source: National Water and Wastewater Engineering Company.

### 2.21. LENGTH OF NETWORK FOR COLLECTION AND TRANSMISSION LINES OF SEWAGE

(km)

Ostan	The year 1390		The year 1392		The year 1393	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
<b>Total country</b> .....	<b>42391</b>	<b>2390</b>	<b>48941</b>	<b>2752</b>	<b>51147</b>	<b>2703</b>
East Azarbayejan .....	2420	22	2733	50	2879	50
West Azarbayejan .....	2278	58	2441	61	2583	64
Ardebil .....	933	32	958	16	1098	39
Esfahan .....	5941	363	6526	383	6921	392
Alborz .....	508	26	704	29	765	30
Ilam .....	683	15	711	23	764	24
Bushehr .....	455	48	467	48	473	48
Tehran .....	4671	80	5942	115	6515	124
Chaharmahal & Bakhtiyari.....	886	73	927	85	977	85
South Khorasan.....	308	20	408	20	427	22
Khorasan-e-Razavi.....	2830	290	3375	287	3558	300
North Khorasan.....	274	18	340	22	359	23
Khuzestan .....	3798	435	5670	609	5309	592
Zanjan .....	363	10	421	14	427	14
Semnan.....	303	18	396	26	421	27
Sistan & Baluchestan .....	459	16	555	30	614	30
Fars .....	2043	181	2094	186	2185	209
Qazvin .....	1028	49	1174	49	1207	49
Qom .....	672	8	737	14	803	15
Kordestan.....	1453	122	1536	155	1571	155
Kerman .....	351	11	462	11	498	11
Kermanshah .....	2645	232	2724	239	2627	107
Kohgiluyeh & Boyerahmad.....	235	30	255	31	255	31
Golestan .....	484	23	524	23	548	24
Gilan .....	644	45	669	52	679	53
Lorestan .....	1179	31	1286	33	1362	35
Mazandaran.....	593	18	656	18	691	18
Markazi .....	1345	31	1440	31	1485	31
Hormozgan.....	750	16	788	17	828	24
Hamedan .....	1233	49	1282	53	1325	56
Yazd .....	626	20	740	23	994	23

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

Ostan	The year 1394		The year 1395		The year 1396	
	Collection network	Transmission lines	Collection network	Transmission lines	Collection network	Transmission lines
<b>Total country</b> .....	<b>53334</b>	<b>2776</b>	<b>55626</b>	<b>2982</b>	<b>59311</b>	<b>3145</b>
East Azarbayejan .....	3096	60	3261	60	3469	86
West Azarbayejan.....	2709	66	2823	70	2969	77
Ardebil .....	1125	44	1163	44	1196	45
Esfahan .....	7231	407	7461	414	7840	430
Alborz.....	815	30	858	34	918	34
Ilam.....	806	24	835	24	895	24
Bushehr.....	492	48	510	48	533	48
Tehran .....	6928	153	7186	268	8324	314
Chaharmahal & Bakhtiari....	1070	85	1102	88	1193	92
South Khorasan.....	452	22	463	22	510	24
Khorasan-e-Razavi .....	3434	289	3995	309	4376	313
North Khorasan.....	374	26	395	26	450	28
Khuzestan .....	5376	625	5452	639	5530	649
Zanjan .....	435	14	452	14	468	15
Semnan .....	462	27	460	27	506	27
Sistan & Baluchestan.....	654	30	666	30	679	30
Fars .....	2322	212	2458	223	2697	243
Qazvin .....	1230	49	1263	53	1281	57
Qom .....	841	15	878	15	960	15
Kordestan.....	1600	134	1729	147	1751	148
Kerman .....	520	11	551	12	625	16
Kermanshah .....	2704	110	2718	112	2735	114
Kohgiluyeh & Boyerahmad...	285	21	292	21	341	21
Golestan.....	551	26	553	27	564	27
Gilan .....	687	53	691	53	669	56
Lorestan .....	1430	35	1474	35	1566	35
Mazandaran .....	825	20	868	20	881	21
Markazi.....	1552	31	1608	32	1673	39
Hormozgan .....	849	26	864	28	897	29
Hamedan.....	1351	59	1379	59	1452	59
Yazd.....	1129	23	1218	28	1363	29

Source: National Water and Wastewater Engineering Company

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

Year and Ostan	In operation <sup>(1)</sup>	Under construction	Under designing
1385 .....	45	27	36
1390 .....	129	33	40
1392 .....	156	37	59
1393 .....	169	30	55
1394 .....	187	21	47
1395 .....	193	19	49
<b>1396 .....</b>	<b>230</b>	<b>31</b>	<b>51</b>
East Azarbayejan .....	10	1	6
West Azarbayejan.....	8	1	4
Ardebil .....	5	0	2
Esfahan .....	15	1	7
Alborz .....	5	0	0
Ilam.....	2	0	2
Bushehr.....	2	0	0
Tehran .....	16	3	3
Chaharmahal & Bakhtiyari.....	5	2	0
South Khorasan.....	2	0	0
Khorasan-e-Razavi .....	10	2	2
North Khorasan.....	4	0	0
Khuzestan .....	9	3	0
Zanjan .....	5	0	0
Semnan .....	6	0	0
Sistan & Baluchestan.....	5	1	1
Fars .....	17	0	2
Qazvin .....	3	1	2
Qom .....	3	1	0
Kordestan.....	7	0	0
Kerman .....	8	0	0
Kermanshah .....	10	1	0
Kohgiluyeh & Boyerahmad.....	1	0	0
Golestan.....	12	4	0
Gilan .....	10	4	4
Lorestan .....	3	0	2
Mazandaran .....	17	2	4
Markazi.....	11	3	5
Hormozgan .....	4	0	0
Hamedan.....	10	0	2
Yazd .....	5	1	3

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

Source: Ministry of Industry, Mine and Trade.

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

Year and Ostan	Area of landscape
1385.....	616.0
1390.....	5441.0
1392.....	6209.0
1393.....	6604.0
1394.....	7336.5
1395.....	7505.1
<b>1396.....</b>	<b>7760.0</b>
East Azarbayejan.....	310.3
West Azarbayejan .....	130.7
Ardebil .....	221.9
Esfahan .....	664.5
Alborz .....	118.4
Ilam .....	43.0
Bushehr .....	85.9
Tehran .....	841.4
Chaharmahal & Bakhtiari .....	260.7
South Khorasan.....	65.5
Khorasan-e-Razavi.....	884.6
North Khorasan.....	39.3
Khuzestan .....	202.1
Zanjan .....	157.9
Semnan.....	552.6
Sistan & Baluchestan .....	294.4
Fars .....	533.7
Qazvin .....	182.0
Qom .....	325.6
Kordestan.....	50.5
Kerman .....	422.7
Kermanshah .....	227.8
Kohgiluyeh & Boyerahmad .....	84.8
Golestan .....	126.2
Gilan.....	158.5
Lorestan.....	31.9
Mazandaran.....	147.1
Markazi .....	275.1
Hormozgan.....	41.5
Hamedan .....	87.7
Yazd .....	191.8

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

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 1392	The year 1393	The year 1394	The year 1395	The year 1396
Percentage of hospitals with appropriate wings <sup>(1)</sup> .....	–	–	83.9	84	86.1	88.3	000
Percentage of rural households enjoying a hygienic sewage disposal system.....	96 <sup>(2)</sup>	96 <sup>(2)</sup>	67.0	69	72.7	0.0	000
Percentage of health and medical centres with appropriate conditions .....	77	71	77.4	81	81.4	85.1	000
Percentage of hospitals with appropriate solid waste management.....	69	79	78.7	80	84.0	90.3	000
Percentage of hospitals with appropriate wastewater management.....	76	73	75.4	75	74.3	77.6	000
Percentage of hospitals with appropriate kitchen and restaurant.....	78	83	78.6	78	78.2	80.0	000

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.

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