Chapter 14

Environment and Life

Genbe Stream, a 1.5 km-long agricultural waterway flowing along the downtown of Mishima City, Shizuoka Prefecture. Rapid economic growth once posed serious water pollution problems, but concerted efforts of citizens, business and the public sector to revitalize the waterfront environment bore fruit -- it is now a clear water stream where fireflies fly about in summer.

1. Environmental Issues

The list of environmental issues is wide-ranging, from waste management to global warming. Japan is, while pursuing regional development at home, taking the initiative in efforts to prevent global warming and conserve the natural environment to help achieve sustainable growth of the entire world.

In fiscal 2007, Japan's total emission of greenhouse gases, which are a major cause of global warming, amounted to 1.37 billion tons (calculated after their conversion into carbon dioxide), representing an increase of 2.4 percent from the previous fiscal year. Carbon dioxide accounted for 94.9 percent of these greenhouse gases, with an emission volume of 1.30 billion tons. A breakdown of carbon dioxide emissions by sector revealed that emissions from the industrial sector accounted for 36.1 percent of the total, followed in order by emissions from the transport sector, the commercial sector (office buildings, etc.), the residential sector, and the energy sector (electric power plants, etc.).

Table 14.1

Breakdown of Carbon Dioxide Emissions in Japan [1)]

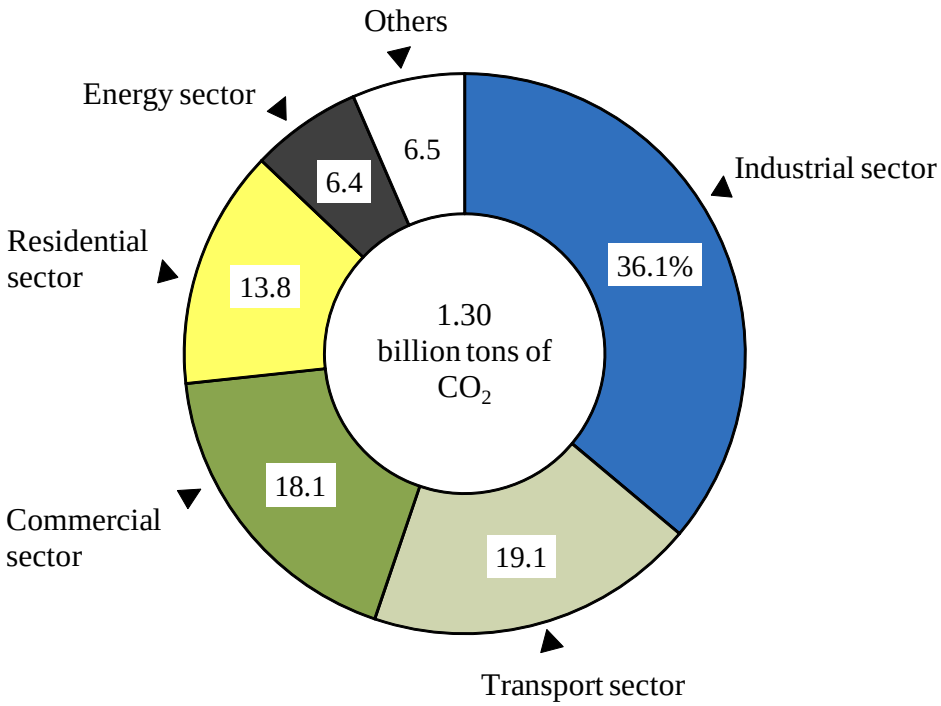
(Million tons)

Item	FY1990	FY1995	FY2000	FY2005	FY2006	FY2007
Total	1,143	1,227	1,255	1,287	1,270	1,304
Industrial sector	482	471	467	456	458	471
Transport sector	217	258	265	257	253	249
Commercial sector	164	185	206	237	232	236
Residential sector	127	148	158	174	166	180
Energy sector	68	73	71	79	77	83
Industrial processes	62	64	57	54	54	54
Waste (incineration, etc.)	22	27	31	30	30	31

1) Volume of carbon dioxide after reallocation to the end-use sector.

Source: Ministry of the Environment.

Figure 14.1
Sources of Carbon Dioxide Emissions in Japan [1)] (FY2007)



1) Volume of carbon dioxide after reallocation to the end-use sector.
Source: Ministry of the Environment.

The state of waste management in Japan had remained grave due to the shrinking remaining capacity of final disposal sites and increased illegal dumping. This led to the Fundamental Law for Establishing a Sound Material-Cycle Society (brought into force in January 2001), which defines basic principles for the creation of a sound material-cycle society. This law has established a legal framework to address issues such as waste disposal and automobile and electrical appliance recycling. Other ongoing efforts include promotion of the "3Rs" (reduce, reuse, and recycle) in waste management, and research and development for the use of waste as a source of energy, with a view to generating a synergy between efforts to manage waste and tackle global warming.

Of various types of waste generated as a result of business activities, 20 of them, including sludge, waste oil, and soot and particulates, are designated as "industrial waste." The fiscal 2006 nationwide industrial waste generation totaled 418.50 million tons. Sludge, animal waste and debris, which account for approximately 80 percent of the total industrial waste, are now increasingly recycled into construction materials, organic fertilizers, and other materials. Thanks to this development, the volume of final disposal (to be put into landfills) fell from 89.73 million tons in fiscal 1990 to 21.80 million tons in fiscal 2006.

Meanwhile, a total of 52.04 million tons of "nonindustrial waste" (household waste and also shop, office and restaurant waste) was generated in fiscal 2006. This translates to 1,116 grams per person per day. In terms of nonindustrial waste disposal in fiscal 2006, the total volume processed was 49.02 million tons. The total volume of recycled waste was 10.22 million tons, with the recycling rate at 19.6 percent. Both the total volume of recycled waste and the recycling rate have been rising every year.

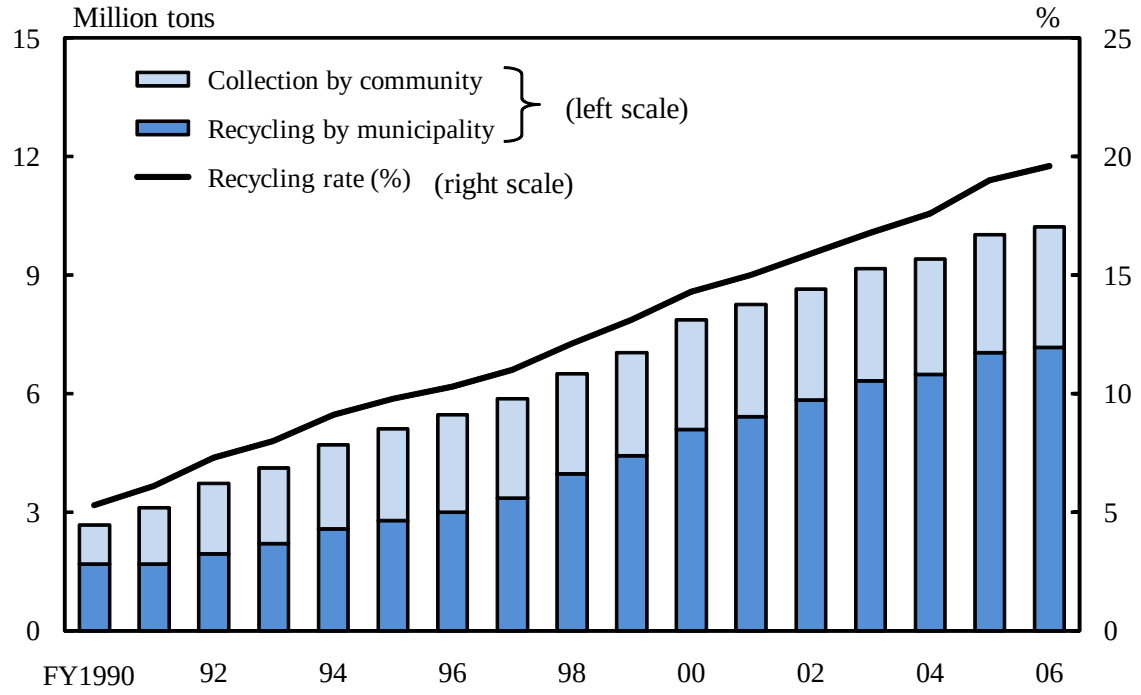
Table 14.2
Waste Generation and Disposal (Industrial and nonindustrial waste)

(Thousand tons)

Item	FY1990	FY1995	FY2000	FY2005	FY2006
Industrial waste					
Total volume of waste generation	394,736	393,812	406,037	421,677	418,497
Recycling	150,568	146,620	184,237	218,888	214,772
Treatment for waste reduction	154,443	177,941	176,933	178,560	181,926
Final disposal	89,725	69,257	44,868	24,229	21,799
Nonindustrial waste					
Total volume of waste generation	...	52,224	54,834	52,720	52,036
Municipally scheduled and collected	42,495	44,100	46,695	44,633	44,168
Brought to transfer station	6,776	5,806	5,373	5,090	4,810
Recyclable waste collected by community	986	2,318	2,765	2,996	3,058
Waste generated daily per person (in grams)	1,115	1,138	1,185	1,131	1,116
Total volume of processed waste	49,282	49,899	52,090	49,754	49,016
Direct incineration	36,192	38,048	40,304	38,486	38,067
Intermediate treatment for recycling, etc.	3,300	6,131	6,479	7,283	7,179
Direct recycling			2,224	2,541	2,569
Direct final disposal	9,790	5,721	3,084	1,444	1,201

Source: Ministry of the Environment.

Figure 14.2
Recycling of Nonindustrial Waste



$$\text{Recycling rate (\%)} = \frac{\text{Total volume of recycled waste}}{\text{Total volume of processed waste} + \text{Volume of collection by community}} \times 100$$

$$\text{Total volume of recycled waste} = \text{Volume of recycling by municipality} + \text{Volume of collection by community}$$

Source: Ministry of the Environment.

2. Housing

According to the Housing and Land Survey conducted in October 2003, the total number of dwellings (in case of apartment buildings, counting the number of component apartments) in Japan was 53.89 million, up by 3.64 million (7.3 percent) from 1998. The number of households was 47.26 million, representing the excess in number of dwellings over households by 6.64 million.

In 2003, the number of occupied dwellings (where people usually live) amounted to 46.86 million, accounting for 87.0 percent of the total number of dwellings. Of these, the number of dwellings used exclusively for living totaled 45.26 million, accounting for 96.6 percent of the occupied dwellings.

A breakdown of occupied dwellings by class of ownership showed that owned houses totaled 28.67 million, accounting for 61.2 percent of the total, which represented an increase of 0.9 percentage points from the figure of 60.3 percent in 1998. Rented houses, on the other hand, numbered 17.17 million, accounting for 36.6 percent of the total.

Table 14.3
Housing Conditions

(Thousands)

Year	Total households	Total number of dwellings	Occupied dwellings	Ownership		Dwellings exclusively for living	Floor space per dwelling (m^2)
				Owned	Rented		
1983	35,197	38,607	34,705	21,650	12,951	31,935	81.6
1988	37,812	42,007	37,413	22,948	14,015	34,701	85.0
1993	41,159	45,879	40,773	24,376	15,691	38,457	88.4
1998	44,360	50,246	43,922	26,468	16,730	41,744	89.6
2003	47,255	53,891	46,863	28,666	17,166	45,258	92.5

Source: Statistics Bureau, MIC.

Table 14.4
Occupied Dwellings by Type of Building

(Thousands)

Year	Total	Detached houses	Tenement houses	Apartments	Others
1983	34,705	22,306	2,882	9,329	187
1988	37,413	23,311	2,490	11,409	203
1993	40,773	24,141	2,163	14,267	202
1998	43,922	25,269	1,828	16,601	224
2003	46,863	26,491	1,483	18,733	156

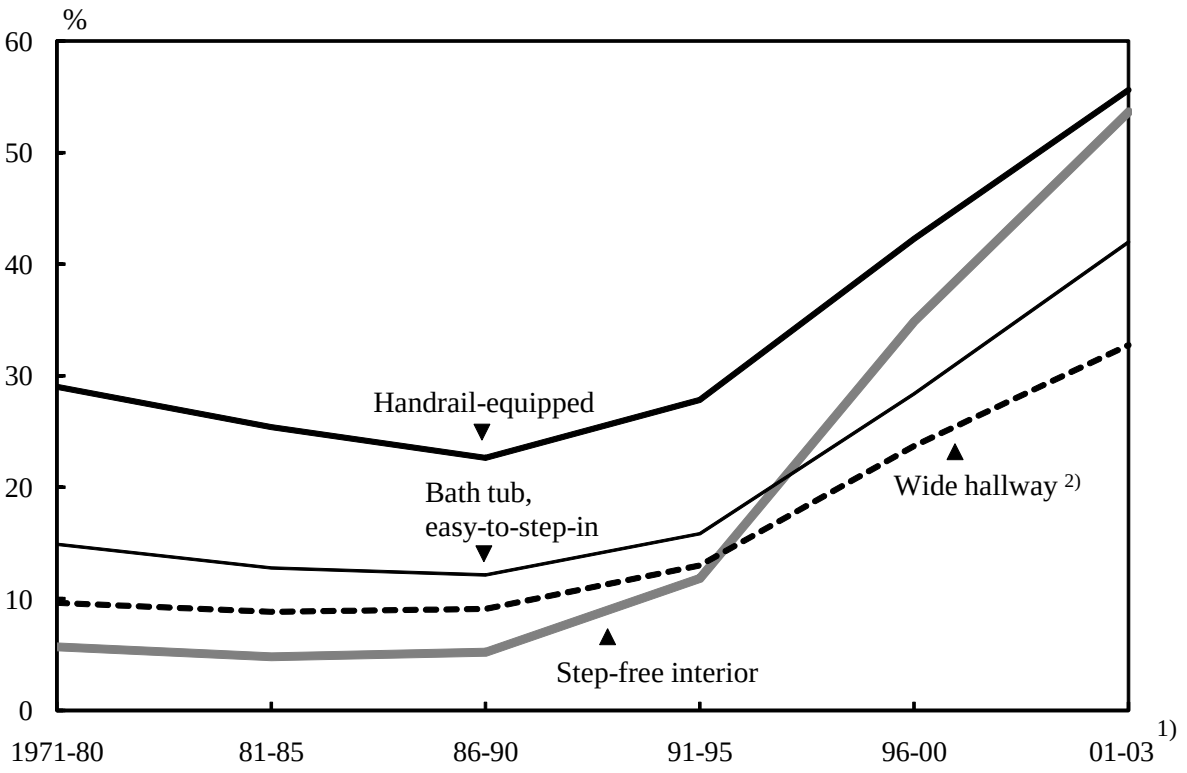
Source: Statistics Bureau, MIC.

Occupied dwellings by building type shows that 26.49 million or 56.5 percent were detached houses, and 18.73 million or 40.0 percent were apartments. The proportion of apartments has consistently increased in recent years.

In terms of construction materials, 24.51 million or 92.5 percent of the detached houses were wood-frame houses (including fire-resistant ones). On the other hand, 13.61 million or 72.6 percent of the component apartments were steel-framed concrete structures.

A high proportion of dwellings constructed recently have been equipped with facilities designed to allow the elderly and physically challenged persons to continue living in a familiar environment. Of those dwellings constructed in the period from 2001 to 2003, 55.6 percent were handrail-equipped and 53.7 percent step-free interior, whereas the percentages for dwellings constructed in the period from 1991 to 1995 were 27.8 percent and 11.8 percent, respectively.

Figure 14.3
Ratio of Housing with Barrier-Free Features by Year of Construction
(2003)



1) From 2001 to September 2003. 2) Wheelchair-accessible hallway.
Source: Statistics Bureau, MIC.

3. Traffic Accidents

In 1970, the annual number of fatalities from traffic accidents hit a record high of 16,765, leading to the enactment of the Traffic Safety Policies Law in the same year. Based on this law, the government has since promoted traffic safety measures in a comprehensive and systematic manner. As a result, the number of traffic accident fatalities declined to 5,744 in 2007, being about one third of that of 1970.

In 2007, traffic deaths per 100,000 population were 4.5 persons, while the number of persons killed per 10,000 motor vehicles was 0.7 persons.

Table 14.5
Traffic Accidents and Casualties

Year	Traffic accidents	Injuries	Deaths [1)]	Traffic deaths [1)]	
				per 10,000 motor vehicles	per 100,000 population
1970	718,080	981,096	16,765	9.0	16.2
1980	476,677	598,719	8,760	2.2	7.5
1990	643,097	790,295	11,227	1.9	9.1
2000	931,934	1,155,697	9,066	1.2	7.1
2005	933,828	1,156,633	6,871	0.9	5.4
2006	886,864	1,098,199	6,352	0.8	5.0
2007	832,454	1,034,445	5,744	0.7	4.5

1) Death within 24 hours of the accident.
Source: National Police Agency.

4. Crime

In 2008, the reported number of penal code offenses (excluding cases related to traffic accidents) was 1.82 million, a decrease of 90,813 (4.8 percent) compared to the previous year. The proportion of thefts was the highest, accounting for approximately 75 percent, or 1.37 million cases (down 4.0 percent from the previous year).

The number of persons arrested for penal code offenses was 339,752 in 2008, a decrease of 25,825 (7.1 percent) compared to the previous year, marking a four-consecutive-year decline.

The ratio of arrests to reported number of offenses marked a post-World War II low at 19.8 percent in 2001. Since 2002, however, it has shown signs of recovery, accounting for 31.5 percent in 2008.

Table 14.6

Trends in Crime (Penal code offenses) [1)]

Year	Reported offenses	Resultant arrests	Persons arrested	Arrest rate [2)] (%)	Crime rate per 100,000 population
1980	1,357,461	811,189	392,113	59.8	1,159.6
1985	1,607,697	1,032,879	432,250	64.2	1,328.1
1990	1,636,628	692,593	293,264	42.3	1,324.0
1995	1,782,944	753,174	293,252	42.2	1,419.9
2000	2,443,470	576,771	309,649	23.6	1,925.5
2005	2,269,293	649,503	386,955	28.6	1,775.7
2007	1,908,836	605,358	365,577	31.7	1,493.6
2008	1,818,023	573,392	339,752	31.5	1,423.7

1) Excluding traffic offenses. 2) The ratio of arrests to reported number of offenses.
Source: National Police Agency.

Various kinds of computers and computer networks are currently playing an essential role as a social foundation. In line with this, crimes utilizing computer networks are becoming increasingly diversified. The number of arrests for cybercrime in 2008, involving the abuse of computer technology and telecommunications technology, was 6,321, up 15.5 percent from the previous year. This represented about a sevenfold increase from the 913 cases registered in 2000.

The police organization consists of the National Public Safety Commission and the National Police Agency, both of which are state organizations, as well as the prefectural police, which are organizations under the authority of individual prefectures. As of April 2008, the prefectural police operated police headquarters, police schools, 1,206 police stations, 6,191 police boxes (Koban) and 7,020 police substations in 47 prefectures.

Local police officers at their respective police boxes/substations are engaged in standing guard over their communities, patrolling, and dealing with criminal cases and accidents to prevent crimes and catch criminals.