

Table 6.7
Proportion of Households with Elderly Aged 60 Years and Over
(Unit: %)

	1988			1994		
	Whole	Urban	Rural	Whole	Urban	Rural
Households with a single elderly person / total households	2.2	1.2	4.5	3.4	2.0	8.2
Households with an elderly Couple / total households	3.0	1.4	6.8	5.3	3.0	13.4
Elderly households of a single person / Households with elderly persons	9.6	7.2	12.2	14.9	11.4	20.0
Elderly households of a couple / Households with elderly persons	13.3	8.4	18.7	23.6	17.2	32.7
Households with elderly persons / Total households	22.6	16.8	36.6	22.6	17.2	40.7

Sources: Rhee Ga-Ok, et al., *A Study on Structural Characteristics of Households with the Elderly*, 1989.
Rhee Ga-Ok, et al., *Living State and its Policy Implications of the Korean Elderly*, 1994.

expectancy at birth for females increased from 53.7 years in 1960 to 77.4 in 1995, or a 23.7 year extension of life expectancy in 35 years (Table 6.8). The life expectancy of Korean women has now reached the level of life expectancy in advanced countries. In contrast, the increase in male life expectancy at birth has been far less than that of females for the similar period. Life expectancy of males at birth rose by 18.4 years, from 51.1 to 69.5, during the same period.

Table 6.8
Life Expectancy at Birth
(Unit: Years)

Year	1960	1965	1970	1975	1980	1985	1990	1995
Male	51.1	58.1	59.8	N.A	62.7	64.9	67.4	69.5
Female	53.7	64.7	66.7	N.A	69.1	73.3	75.4	77.4

Sources: Ministry of Health and Social Affairs, *Yearbook of Health and Social Statistics*, 1991.
National Statistical Office, *Social Indicators in Korea 1996, 1997*.
National Statistical Office, *1995 Life Tables for Korea*, 1997.

Table 6.9
Probability of Dying by Age in 1995
(Unit: %)

Age	Male	Female	Ratio	Age	Male	Female	Ratio	Age	Male	Female	Ratio
0	0.92	0.78	1.24	30	0.97	0.37	2.62	65	16.44	7.63	2.15
1	0.28	0.26	1.08	35	1.46	0.52	2.81	70	24.80	13.69	1.81
5	0.24	0.16	1.50	40	2.27	0.79	2.87	75	35.69	23.16	1.54
10	0.20	0.13	1.54	45	3.36	1.17	2.87	80	49.89	36.63	1.36
15	0.52	0.24	2.17	50	5.00	1.80	2.78	85+	100.00	100.00	1.00
20	0.61	0.29	2.10	55	7.33	2.74	2.68				
25	0.79	0.32	2.47	60	10.79	4.38	2.46				

Source: National Statistical Office, *1995 Life Tables for Korea*, 1997.

Considering that women's life expectancy is generally longer than men's, the difference of 7.9 years between males and females is quite large compared to the usual gender difference noted in advanced countries.

A comparison of the probability of dying among each age group as shown in Table 6.9 furnishes part of the clue to the reason for the large gender gap. Between the early and the very old ages, there is not much difference in the probability of dying.

For example, the probability of dying before the age of 1 is 0.92 percent for males and 0.78 percent for females, and 0.28 percent for males and 0.26 percent for females aged 1. However, as they grow older, the gender gap in the probability of dying up to 60 years old becomes relatively large in proportion. Table 6.9 shows that the gender gap regarding the probability of dying reaches a peak in the age groups of 40 to 45 and 45 to 50, which are also the peak ages for a person's social and economic participation. When this peak is exceeded, the gender gap for occurrence of death becomes smaller with age. One can infer from the discrepancies found in the data that the reason for the shorter life span of men in this country resides in the conditions of men's economic participation and their associated health practices. Insecure and stressful work environments and poor health habits are responsible for the high risk of death among economically active men. Death by industrial accident remains at a high level. Extremely long working hours (49.2 hours a week in manufacturing industries in 1995), can also be a contributing factor to high risk of death in those years. Traffic accident deaths, (35.9 per 100,000 persons in 1994), are also among the highest in the world. In this stressful work and social environment, people are more inclined to acquire bad health habits. Almost two-thirds of males are smokers, among whom 70 percent aged 15 and higher smoke more than a pack of cigarettes a day. More than 80 percent of males 15 years and older drink alcoholic beverages, while more than one-tenth of males drink

almost every day. Female smoking and drinking rates remain low in comparison to other industrial countries. However, studies show that these rates have been rising in recent years (6.0 percent and 44.6 percent, respectively, in 1995).

The infant mortality rate is an important component of the degree of life expectancy and a key determinant of the reproductive health status of women of child-bearing age. As shown in Table 5.10, the infant mortality rate over the past 30 years has fallen dramatically owing to improved living conditions as well as to increased utilisation of health-care services. From 1960 to 1992, the infant mortality rate per 1,000 livebirths decreased from 69.0 to 9.9. The major causes of infant death were congenital malformation and certain conditions that originate during the prenatal period. The maternal mortality rate per 100,000 livebirths fell from 88 in 1965 to 30 in 1990. Hospital studies as shown in Figure 6.3 point to toxemia as the most common cause of maternal death from 1961 to 1966, accounting for 51.8 percent of all maternal deaths. From 1982 to 1986, postpartum haemorrhage was the most common cause of death, accounting for 60.0 percent of all maternal deaths. This problem stems from a failure of the prenatal emergency care system, specifically due to a lack of transportation and an inadequate referral system between primary, secondary and tertiary care facilities.

Reproductive health has greatly improved as more women give birth in hospitals. The proportion of pregnant women receiving prenatal care rose from 57.2 percent in 1977 to 99.2 percent in 1994. This situation is partly due to fact that the medical insurance system was expanded to provide universal coverage during the fifteenth year. Similarly, 98.8 percent of all deliveries took place at medical institutions in 1994. Among these deliveries, 96.2 percent occurred at hospitals and clinics, 1.9 percent at midwifery clinics, and 0.7 percent at public health care facilities.

The same as in concerns with population

Table 6.10
Trends in Infant Mortality Rate and Maternal Mortality Rate
(Unit: %)

	1960	1965	1970	1975	1980	1985	1990	1993
Infant mortality rate ¹⁾	69.0	61.8	53.0	41.0	17.3	13.3	12.8	9.9
Maternal mortality rate ²⁾	—	88.0	83.0	56.0	42.0	34.0	30.0	—

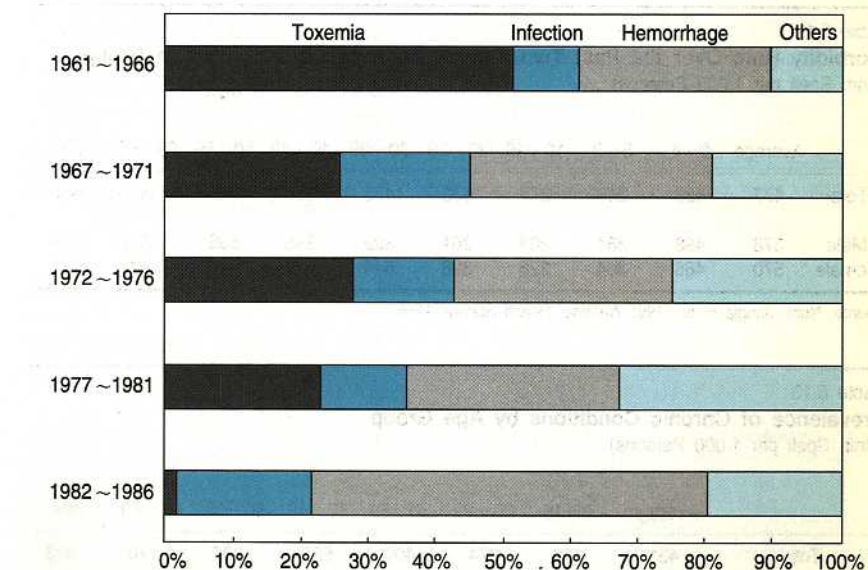
Notes: 1) per 1,000 livebirths
2) per 100,000 livebirths

Source: Ministry of Health and Social Affairs, *Yearbook of Health and Social Statistics*, annual.

control, induced abortion is also one of the most problematic issues concerning reproductive health. In principle, abortion is not allowed under the Maternal and Child Health Law in Korea. Yet, on account of the large number of pregnancies caused by faulty contraceptive practices, the abortion rate remains high. The rate of induced abortion among married women was 49 percent in 1994 (Table 6.3). Table 6.11 shows that only 61 percent of pregnancy proceeded to actual birth, while 28.3 percent ended up as induced abortions. It also shows that abortion is more prevalent in urban than rural areas because of easy access.

The high abortion rate is partly due to unwanted pregnancies among married

Figure 6.3
Causes of Maternal Death



Note: Results are based on medical data. Deaths occurring outside the hospital may not be reported.
Source: Park, Inwha and Nami Hwang, *Policy Issues and Development Strategies of MCH Services in Korea*, KIHASA, 1993.

women caused by faulty contraceptive practices and prenatal sex selection based on the desire for male offspring. Loose sexual standards among youngsters is another contributing factor. According to a study conducted in 1990, abortions among unmarried women accounted for at least 33 percent of all abortions performed. Students and young employees receive sex education and counselling services, but family planning and contraceptive services are rarely provided for in the context of the Confucian culture. Despite legal restrictions on induced abortions, they are widely available and confidentially performed. The first institutional attempt which criminalised abortion was made to control the practice of induced abortion in 1953. According to the Act,

medical personnel providing such services and women accepting them could be imprisoned. However, since the start of the family planning programme as part of the population control policy in the early 1960s, legal regulations have not curbed the easy access to abortion so that services remain available nationwide throughout the past three decades.

Although women's life expectancy at birth is longer than men's, women are ill more frequently and for a longer period than men. According to the 1995 National Health Survey, the morbidity rate over the two weeks, from June 17-30, before the time of the survey was higher among women than among men. The highest morbidity rates were found among women in their fifties and older (Table 6.12).

The prevalence of chronic diseases was also higher among women than men. The differences in the prevalence of chronic conditions between women and men generally became greater with the increase of the respondents' age.

Several reasons for the higher morbidity rate among women can be identified. First of all, women are more at risk than men due to their frequent contact with young children and emotional distress. Because mothers have more contact with their children than do fathers, they tend to develop infectious diseases transmitted by children. Also, women experience more psychological distress, such as anxiety, depression, guilt, and conflicting demand, on a day-to-day basis and throughout their lifetime, than men. In addition, women tend to readily label their symptoms as physical illness and assess their illnesses and injuries as more severe and serious than men. The patriarchal family culture deeply rooted in Confucianism seems to aggravate the inferior health environment of women.

Health Care Systems

In providing curative care, Korea's health care system depends primarily on the private sector. In 1996, private clinics and hospitals

comprised more than 91.0 percent of all medical facilities and 91.0 percent of all beds, and employed 88.8 percent of all physicians. Despite the increase in the proportion of health expenditures borne by health insurance, along with the expansion of coverage by the compulsory national medical insurance plan, in 1993 the private sector still bore 56.7 percent of national health spending while the public sector was responsible for only 20.2 percent (Table 6.14).

The proportion of total national health expenditures in GDP increased from 2.1 percent in 1970 to 5.1 percent in 1985, and is estimated to have been around 4.8 percent in 1995 (Figure 6.4).

The private sector-centred healthcare system lead to a severe disparity in the distribution of health resources between urban and rural areas. The number of doctors per 10,000 persons in urban and rural areas was respectively 13.3 and 3.2, in 1994 (Table 6.15).

There are also regional disparities in the number of hospital beds, with 45.7 beds per 10,000 persons in urban areas and only 25.1 in rural areas. The inadequacy and poor distribution of medical personnel and facilities has exacerbated the unbalanced quality of health care provision throughout the country, despite the government's efforts to establish more health care facilities in rural areas. In order to access health care facilities, rural residents have to spend more on travel than do urban residents because of the lesser quantity of medical care facilities in rural areas.

To overcome the problem of unequal distribution of medical resources, the government has continuously tried to replenish the supply of medical manpower and facilities in rural areas. Financial incentives such as long-term and low-interest loans have been provided to those who establish medical facilities in rural areas. The government has also expanded primary health facilities and outfitted them with modern medical equipment in an effort to improve health services for people in rural areas. The government enact-

Table 6.11
Pregnancy Outcome by Residence
(Unit: % (Number))

	Entire Country	Urban	Rural
Total pregnancies	100.0 (15,316)	100.0 (12,384)	100.0 (2,932)
Births	61.0	59.7	66.3
Still births	0.4	0.3	0.6
Abortions	8.2	8.5	6.8
Induced abortions	28.3	29.2	24.6
Pregnant	2.1	2.2	1.6

Source: Korea Institute for Health and Social Affairs, 1994 National Fertility and Family Health Survey, 1995.

Table 6.12
Morbidity Rate Over the Past Two Weeks, from June 17-30, by Age Group
(Unit: Spell per 1,000 Persons)

	Average	0~4	5~9	10~19	20~29	30~39	40~49	50~59	60~69	70+
Total	477	483	348	217	333	435	552	749	965	867
Male	378	498	384	209	261	322	395	536	730	749
Female	570	465	304	226	396	544	712	946	1,140	924

Source: Nam, Jungja et al., 1995 National Health Survey, 1996.

Table 6.13
Prevalence of Chronic Conditions by Age Group
(Unit: Spell per 1,000 Persons)

	Average	0~19	20~29	30~39	40~49	50~59	60~69	70+
Total	431	138	274	400	562	832	1,170	973
Male	335	140	234	314	432	616	876	816
Female	521	136	303	483	695	1,031	1,279	1,048

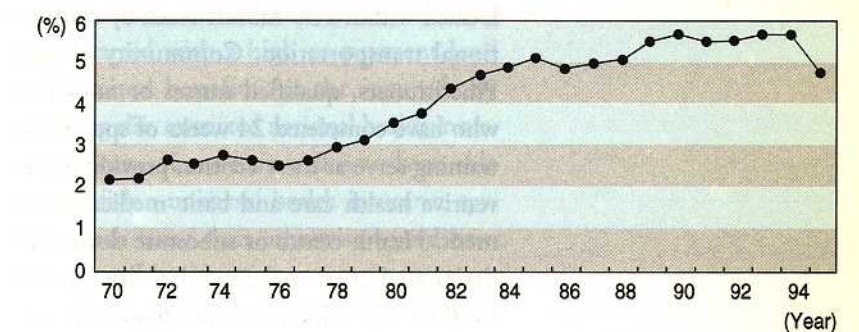
Source: Nam, Jungja et al., 1995 National Health Survey, 1996.

Table 6.14
Components of National Health Spending
(Unit: %)

Year	Health Insurance	Private Sector	Public Sector
1980	9.75	71.25	19.01
1985	16.21	68.63	15.17
1990	21.65	57.31	21.04
1993	23.11	56.70	20.18

Source: Hong Jungkee, *Projections and Implicit Costs of National Health Care Expenditures*, Korea Institute for Health and Social Affairs, 1995.

Figure and Table 6.4
Ratio of National Health Spending to GDP



(Unit: %)

Year	Ratio to GDP	Year	Ratio to GDP	Year	Ratio to GDP
1970	2.13	1979	3.16	1988	5.08
1971	2.20	1980	3.56	1989	5.52
1972	2.65	1981	3.78	1990	5.69
1973	2.55	1982	4.36	1991	5.51
1974	2.76	1983	4.71	1992	5.52
1975	2.64	1984	4.84	1993	5.67
1976	2.49	1985	5.11	1994	5.64
1977	2.62	1986	4.85	1995	4.75
1978	2.96	1987	4.97		

Source: Hong Jungkee, *Projections and Implicit Costs of National Health Care Expenditures*, Korea Institute for Health and Social Affairs, 1995.

Table 6.15
Health Resources by Area in 1994
(Unit: Numbers per 10,000 Persons)

	Urban	Rural	National
Beds	45.7	25.1	41.0
Hospitals	0.16	0.10	0.14
Clinics	3.6	1.5	3.1
Doctors	13.3	3.2	11.0
Traditional Medical Doctors	1.7	0.5	1.4
Pharmacists	0.68	0.11	0.55

Source: Ministry of Health and Welfare, *Yearbook of Health and Welfare Statistics*, annual.

ed a special law in 1980, allowing "Public Health Doctors" to work in medically underserved areas in lieu of compulsory military duty. As follow-up, the government established 1,303 health subcentres in rural and fishery areas, and 2,301 public health doctors were assigned to subcentres in 1994.

In 1981, the Special Law for Primary Health Care in Rural and Fishery Areas was enacted. As of 1995, some 2,039 Primary Health Care Posts (PHP) had been established in rural and fishery areas with a population of more than 500 (more than 300 for the islands), providing medical facilities located within a 30-minute reach by conventional transportation. Community Health Practitioners, qualified nurses or midwives who have completed 24 weeks of special job training serve at these centres, providing preventive health care and basic medical treatment. Health centre or subcentre doctors in designated areas make regular visits to the PHP for supervision and consultation.

Patients are first required to visit a primary care doctor, or a hospital, prior to being referred to a general or university hospital.

This referral system was introduced in 1989 to discourage patients from going directly to expensive medical facilities for minor ailments. Under this referral system, patients visit a doctor at a clinic or hospital of their choice near their homes, and must obtain a referral letter in order to receive treatment at a general or university hospital, with no regional restrictions. This regulation of course does not apply to emergencies, and the referral system allows for exceptions regarding certain types of treatment. In practice, however, there are several possible ways that patients can receive the desired treatment from their preferred provider immediately, rather than through the referral process. "Preferred provider" for patients means the nearest urban medical centre, rather than the local hospital. Hospitals have no cause to refuse patients, either on an inpatient or an outpatient basis, since they are paid according to the fee-for-service schedule. The fee-for-service payment system also encourages medical centres to treat patients who actually do not require treatment in a specialised department of the hospital. Thus, patients are often willing to travel to urban areas to receive what they believe to be better treatment and what the primary care sector or the rural care sector can not provide. Consequently, the demand is geared towards urban medical centres, especially large university hospitals or general hospitals, where the waiting time for some services is unnecessarily long, resulting in a deterioration of the quality of service.

In 1977, Korea initiated a compulsory health insurance scheme with limited coverage of less than 10 percent of the population. Until then, an individual's medical care was his or her own responsibility, with the exception of those insured under pilot health insurance schemes and the indigent who were cared for by government and/or private charity hospitals. In 1976, the Korean government introduced a health insurance law to provide its citizens with compulsory medical care. The compulsory medical insurance plan first covered only firms with 500 or

more workers due to the government's financial limitations. At the same time, the Medicaid programme for those under the poverty line was introduced under government sponsorship. Since 1977, coverage has gradually been extended to smaller firms (Table 6.16).

In 1983, the threshold of 500 workers was reduced to 16 workers, and even firms with fewer than 16 workers could be insured on a voluntary basis. At the same time, there was a growing need to cover rural residents. The government expanded coverage to include rural residents in 1988 and urban residents in 1989, wherein the government subsidises half of total expenditures. At the beginning, the compulsory medical insurance scheme covered a maximum of 180 days in a year, while in 1997, this coverage period was extended to 270 days a year. Year-round coverage has yet to become a reality. However, the development of the health insurance scheme has made significant contributions to increasing accessibility to health care services. Utilisation rates for medical and hospital services have risen rapidly with the expansion of coverage.

As summarised in Table 6.17, the National Health Insurance scheme is currently composed of three different elements: Industrial Health Insurance Funds for industrial workers (145 funds), Government Health Insurance Funds for government employees and private school teachers, and Regional Health Insurance Funds for rural and urban self-employed workers (227 regions). Most funds are legally independent in terms of both administration and finance. The National Federation of Medical Insurance plays an important role in examining and paying fees charged by medical care institutions. Premiums for industrial and government insurance funds are imposed at a proportional rate of the insured's monthly earnings, while for the regional insurance funds, several factors such as income, value of real estate and family size are taken into account in calculating the premiums. For the financing of regional funds, the government

provides subsidies, most of which are supported through capitalisation. A portion of the subsidies are distributed to the funds in different amounts depending on the amount of taxable income and the dependency ratio of the elderly for each fund. There is some disparity in the financing ability among funds. Some funds have accumulated a considerable amount of financial reserves, whereas others are financially weak. To lessen these disparities, a risk-sharing mechanism was adopted in 1991, based on the simple idea that the richer insurance funds can subsidise the poorer ones.

The national health insurance system initially started with a high co-payment level and limited benefits for the insured. By adopting this restricted national health insurance system, Korea may well have been able to establish a universal health insurance system much faster than otherwise would have been possible. However, co-payments are actually higher than the official schedules. For example, under the current medical insurance scheme, patients are supposed to

Table 6.16
Major Health Insurance Developments in Korea

Year	Major development	Population coverage ¹⁾ (%)	Per capita GNP (US\$)
1977	▶ Initiated compulsory health insurance for firms with 500 workers or more ▶ Provided medicaid programme for low income earners under public assistance scheme	14.5	1,012
1979	▶ Compulsory insurance for government employees, teachers, and the staff of private schools ▶ Expanded coverage to firms with more than 300 workers	26.9	1,644
1981	▶ Expanded to firms with at least 100 workers	29.6	1,734
1983	▶ Expanded to firms with 16 workers or more	39.3	2,002
1987	▶ Included oriental medicine under insurance coverage	79.1	3,110
1988	▶ Compulsory insurance for rural residents ▶ Expanded to firms with five workers or more	—	4,127
1989	▶ Compulsory insurance for urban residents ▶ Included prescription drugs at pharmacy within its coverage	99.9	4,994
1995	▶ Extended coverage from 180 to 210 days	—	10,076
1996	▶ Extended insurance from 210 to 240 days ▶ Unlimited coverage for elderly and disabled	—	—
1997	▶ Extended insurance from 240 to 270 days	—	—

Note: 1) Includes population under medicaid.
Sources: Ministry of Health and Welfare; Bank of Korea; Federation of Korean Medical Insurance Societies.

Table 6.17
Current Status of Health Insurance Scheme in Korea (in 1996)

Types	▶ Universal social insurance system with 373 funds nationwide: a. Industrial workers (145 occupational funds); b. Civil servants and private school teachers (1 fund); and c. Self-employed (227 regional funds).
Population Coverage	a. Employees of firms with 5 or more workers; b. Civil servants, private school teachers, and dependents of military personnel; and c. Employees of firms with less than 5, the self-employed, and pensioners.
Financing	▶ Contribution plus government subsidy: a. 3% total, 1.5% employee, 1.5% employer; no ceiling; b. 3.8% total, 1.65% employee, 1.65% government; no ceiling; and c. Premiums according to income, property, and family size, plus government subsidy (half of expenditures). ▶ Risk adjustment among 373 funds nationwide.
Benefits	▶ Statutory benefits: (mainly in kind) medical examinations, drugs, surgery, nursing, ambulance and check-ups. ▶ Duration: 240 days/year (no limit for the disabled and the elderly). ▶ Patient co-payment: 20% of hospitalisation fees and varying rates of co-payment for outpatient fees (30% clinic, 40% hospital, 55% general hospital). ▶ Reimbursement: fee-for-service, fees under control of government, additional fees allowed (10% clinic, 15% hospital, 23% general hospital, 30% university hospital) and special consultation fees for specialists at hospitals.
Organisation	A, b, c: Ministry of Health and Welfare Affairs. A, c: National Federation of Medical Insurance. B: Korean Medical Insurance Corporation.

Source: Yeon, Hacheong, *Future Reform Strategies of the Health Insurance Scheme in Korea*, Korea Institute for Health and Social Affairs, 1996.

pay 20 percent of hospitalisation fees, and certain rates regarding co-payment of outpatient fees. Patients pay the full amount for any treatment beyond the limited period per year, which now accounts for 270 days. In addition to high co-payments, patients have to pay for treatment fees that are not covered by the fee-for-service schedule. These limits have led to a financial burden for some patients, especially the poor and the elderly. Thus, low income groups can not easily access medical care because they are burdened by heavy payments. Therefore, the prevalence of patients paying out of their own pockets leads to inequities.

Physician and hospital reimbursements are largely based on the fee-for-service schedule, which is determined by the government. The fee-for-service reimbursement system is linked to the physician's over-treatment problem and the deterioration of health care quality. Primary care doctors and hospitals are paid mainly on a fee-for-service schedule covering several thousand items. They therefore tend to give each patient as much treatment as possible, including unnecessary practices such as the duplication of services and the prolongation of visits or stays in hospitals. This leads to a volume of services beyond those which would be considered optimal on purely medical grounds. Furthermore, volume expansion can lead to malpractice as physicians do not spend sufficient time with their patients.

The above-mentioned issues have inspired a wide variety of reforms to be enacted. Reform strategies primarily address the questions of how to attain efficiency in managing the health insurance scheme, how to increase fairness among the insured and the insurance funds; and how to improve the quality of health care.

To cope with the burdensome out-of-pocket payment problem, the government has considered expanding the number of reimbursable benefits by insurance funds and reducing the co-payment rate. A more rational use of hospital facilities could be expected if more services were included in the

reimbursement schedule. For example, many people are waiting for expensive tests, such as Magnetic Resonance Imaging, ultrasonic testing and other electronic examinations, to be covered by insurance. In addition to this measure, the reimbursable treatment period per year is presently 240 days, to be extended gradually every year until it finally covers 365 days by the year 2000. This extension plan will provide more treatment opportunities for the chronically ill and the elderly who require more medical attention and longer treatment.

These measures would lead to restructuring health care financing. Financing a broader coverage of benefits will certainly result in higher premiums while also increasing government subsidies to regional funds, whereas the pressure of increasing expenditures for financially weak funds must be alleviated through a risk-sharing mechanism. For low-income earners, some adjustments in the premium schedule should be arranged.

To solve the problem of over-treatment and the deterioration of health care quality, the government is now considering reformulating the fee-for-service structure into a Resource Based Relative Value Scale and introducing the Diagnosis Related Groups system. The former price mechanism is expected to alleviate treatment distortions by physicians. The latter DRG system underwent testing to see if it can be successful, through a series of demonstration projects effective until late 1997. Such a system would be phased in, starting perhaps with inpatient treatment which can be more readily defined and easily calculated. However, the system might eventually be extended to most services, including some outpatient treatments provided by private clinics. Another strategy to consider is screening medical bills more carefully. Particularly, it might be possible to give the insurance funds more leeway when it comes to screening, including the review of bills and treatment processes.

Another view towards making the system efficient suggests that Korea could develop a

competitive health insurance system. This development could eventually move, as in several European countries, towards giving individuals a choice among insurance funds, thus introducing an element of competition among the funds.

In order to mitigate the uneven distribution of physicians and health care facilities, government should subsidise local private hospitals and public health centres through long-term loans with low interest rates. To finance the fund, the government recently established a tax, called the "Special Tax for Agricultural Industry". Another measure is

to strengthen the function and structure of health centres for chronic disease control for the elderly. Also being considered is the development of the health centre as a central organisation in charge of a comprehensive health promotion programme that includes health education. Meanwhile, in rural areas, two or three health posts can be integrated into a single, larger one to expand the level of treatment facilities. Furthermore, it is necessary to reshape the role of the Health Care Post according to geographic characteristics and population size and to strengthen these posts.

Education

Scholars have often indicated that the past three decades of overall development in Korea have by and large owed their success to the growth of a well-educated population. Even at the threshold of economic development in the 1960s, Korea's educational level was far above then-developing countries with equivalent income such as Hungary and Italy. For example, the nation's illiteracy rate was only 27.9 percent and the enrolment rate of primary school recorded 59 percent. Moreover, in the past three decades, enormous improvements have been made in the enrolment of secondary and tertiary schools, which provides a sufficient pool of cheap but well educated workers needed for economic development. Considering the fact that human resources are the key factor in economic and social development, Korea's fast development would not have been possible without the rapid expansion of the educational system grounded upon a relatively high level of educational attainment from an early stage.

Table 7.1
School Enrolment Rate by Level of Education
(Unit: %)

Year	Kindergarten	Primary school	Middle school	High school	Higher educational institution ¹⁾
1966	1.1	98.1	41.7	26.6	6.7
1970	1.3	102.8	54.1	29.3	9.0
1975	1.7	106.1	72.6	41.8	9.7
1980	4.3	103.1	96.0	66.2	17.0
1985	18.6	102.0	99.7	78.3	37.2
1990	30.9	99.8	98.4	87.2	37.4
1995	40.1	102.1	102.8	91.0	57.9
1996	41.9	97.1	102.9	89.8	61.8

Note: 1) Higher educational institutions include junior colleges, colleges of education, and universities.
Source: Korean Educational Development Institute, *Educational Indicators in Korea*, 1996

7.1 Educational Profile

In Korea, education is structured in a 6-3-3-4 pattern, common in most countries. The Education Law of 1949 stipulated that primary education is compulsory.

As the result of the government's having given first priority to education to exemplify socio-economic development, the majority of primary-school-age children were able to attend school in the early 1960s, and the enrolment rates of middle and high school increased rapidly in the next three decades (Table 7.1). In the late 1960s, all children aged 6 to 11 years were able to attend school, and in the late 1970s, more than 90 percent of children from 12 to 14 years old attended school. In 1995, all children of school age (14 years old and under) were able to finish at least middle school. Also, the high school enrolment rate has followed the same pattern as middle schools, going beyond 90 percent in 1995. As far as educational opportunities are concerned, with few exceptions almost all Koreans of school age are able to finish high school.

As far as enrolment rates are concerned, regional disparities in educational opportunities are negligible up to the level of secondary education. However, in providing higher education, the capital city, Seoul, has a strong advantage over other cities or rural areas. Although the ratio of students to population does not show an outstanding difference between areas, most of the prestigious universities are concentrated in Seoul and other large cities (Table 7.2). The gap in accessibility to higher education, particularly between Seoul and other areas, provides a

strong motive for families to move into the city for their children's benefit. Although the gap in higher education becomes smaller, the gender gap concerning educational opportunities is substantial. This subject will be examined in detail in the next chapter.

The enrolment rate in primary education achieved 100 percent as early as the 1960s. In 1985, the transition rate from primary school to middle school reached 99 percent. Shortly afterward, the transition rate to high school began to follow a similar pattern. The transition rate from middle to high school exceeded 91.4 percent at the onset of the 1990s, followed by a record 98.7 percent in 1996 (Table 7.3). On the other hand, the drop-out rate is negligible in primary and secondary educational institutions, since leaving school is strongly discouraged in the Korean school system. In secondary education, the drop-out rate is less than 3 percent. In other words, all children are required to complete secondary education except in certain extreme situations. The transition rate from high school to higher education has been increasing slowly yet continuously. Until the late 1980s, the government strongly controlled the expansion of college-level education for fear of creating a body of educated unemployed, and because a large quantity of low-cost albeit reasonably educated workers is needed. As the 1990s moved along, expansion of higher educational institutions proceeded at an outstanding pace. This is reflected in the rapid increase in the transition rate from high school to higher education, reaching 79 percent in 1996. Now, upon birth a child has a 77 percent probability of obtaining a higher education.

This rapid expansion of education could not be possible without a strong demand by the people for education, as well as the government's firm commitment to universal education as a precondition for development. And why has the social demand for education been so strong in Korea? Part of the answer stems from the Confucian cultural tradition. Confucian culture places a great importance on studying and the role of

Table 7.2
Number of Students and Schools by Area

Area	Student/ Population Ratio	Number of students per 10,000 persons ¹⁾	Number of schools ²⁾
Seoul	21.4	415	230
Pusan	24.6	508	51
Taegu	26.2	505	25
Inchon	22.2	290	14
Kwangju	29.4	819	26
Taejon	29.6	835	26
Kyonggi	21.5	373	76
Kangwon	26.9	652	26
Chungbuk	25.2	585	23
Chungnam	23.8	516	29
Chonbuk	26.6	630	39
Chonnam	21.5	271	18
Kyongbuk	23.9	570	35
Kyongnam	22.3	293	26
Cheju	23.4	503	6

Notes: 1) Students include those in colleges, universities, and graduate schools.

2) Schools include colleges, universities and graduate schools.
Source: National Statistical Office, *Social Indicators in Korea* 1996, 1997.

Table 7.3
Transition Rate of Graduates to a Higher School Level
(Unit: %)

Year	Primary school	Middle school	High school
1970	63.2	70.2	33.9
1975	76.8	75.5	40.4
1980	93.7	84.6	43.0
1985	98.9	88.8	48.8
1990	99.4	91.4	43.3
1995	99.4	96.5	74.2
1996	99.0	98.7	78.9

Source: Korean Educational Development Institute, *Educational Indicators in Korea*, 1996.

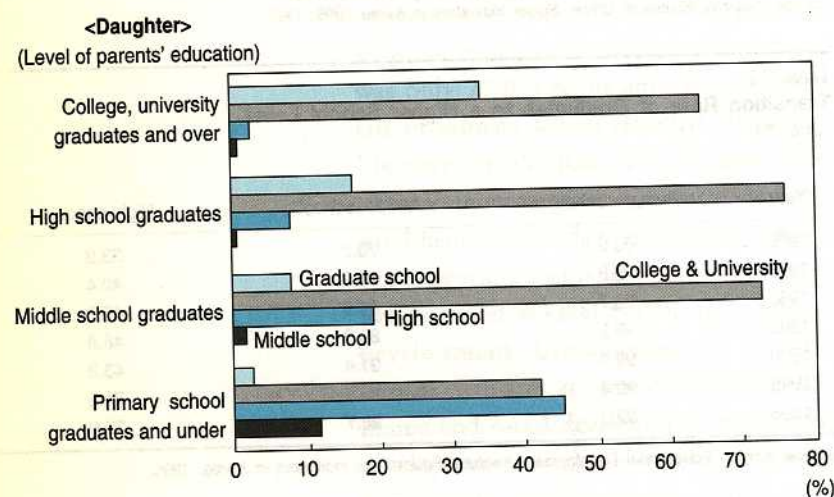
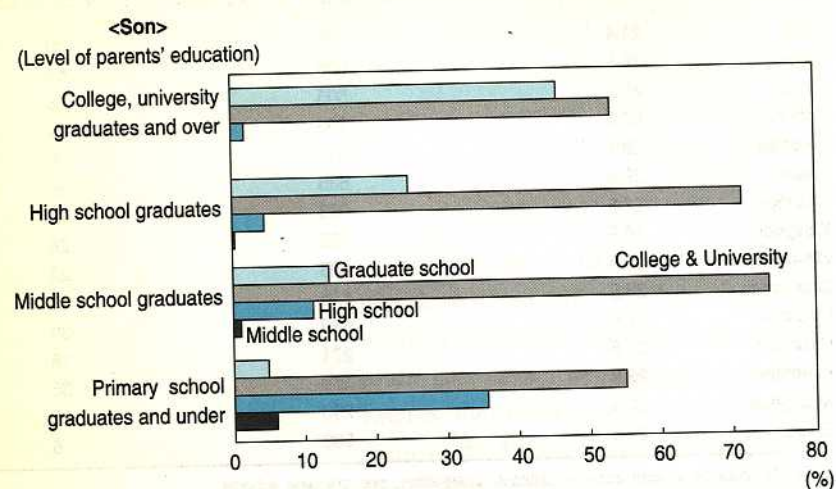
Table 7.4
Level of Schooling (25 years old and over)
(Unit: %)

Year	Primary school graduates	Middle school graduates	High school graduates	Colleges & University graduates
1970	73.4	11.5	10.2	4.9
1975	65.5	14.8	13.9	5.8
1980	55.3	18.1	18.9	7.7
1985	43.3	20.5	25.9	10.2
1990	33.4	19.0	33.5	14.1
1995	27.6	15.7	37.5	19.1

Source: National Statistical Office, *Advance Report of 1995 population and Housing Census*, 1996.

scholars. Therefore parents are willing to go to great sacrifices to see that their children get an education, pushing them to attain as much as possible. However, an even more important factor lies in Korean society and the historical background. Korean society is

Figure and Table 7.1
Expected Level of Schooling for Children in terms of Parental Level of Education in 1993



Level of parental education	Middle school		High school	
	Son	Daughter	Son	Daughter
Primary school	5.4	11.3	35.1	45.0
Middle school	0.4	1.0	10.6	18.7
High school	0.1	0.1	3.7	7.5
College and university	0.0	0.2	1.0	1.8
Total	1.4	3.0	12.1	17.6

Level of parents' education	College, University		Graduate school	
	Son	Daughter	Son	Daughter
Primary school	55.0	42.0	4.5	1.8
Middle school	75.6	72.8	13.4	7.5
High school	71.6	76.1	24.7	16.3
College and university	53.3	64.2	45.7	33.8
Total	64.6	64.8	21.9	14.6

Source: National Statistical Office, *Social Indicators in Korea*, 1996.

unusually homogeneous in terms of language, religion, and culture. Moreover, its traditional social-class system was all but destroyed in the upheaval created by foreign military occupation, war, and national partition. These events weakened many of the influences that strongly condition social mobility in other countries and left education as a uniquely important means of individual advancement. This explains the observed fierce competition for places in the higher levels of the school system, which may do little to make people more productive. Schooling has practically everything to do with whether one will be successful in gaining access to higher income jobs and enviable social or powerful bureaucratic positions.

Although education is highly valued in the Confucian cultural tradition, there were very few people who attended primary school in the early stages of Korea's development. In 1970, only 26.6 percent of Koreans had the opportunity to attend school beyond the primary level (Table 7.4). Along with an extended educational opportunity, the proportion of persons entering high school increased rapidly for the next three decades. In 1995, 56.6 percent of Koreans had attended high school and beyond.

The rapid improvement of schooling levels is partly attributable to the parents' strong aspirations for their children to get an education as a compensation for their own lack of it. As shown in Figure 7.1, most parents expect their children, especially their sons, to finish college, even though the financial burden is enormous, because in most cases the costs of college-level education are not borne by the students themselves.

7.2 Educational Expenditures

Most developing countries have put enormous efforts on increasing human resources as part of their development strategy. Korea is no exception, though a different pattern of development has been applied. For many South American countries, the

expansion of the educational system did not bring about economic growth; instead, an increased number of educated unemployed was the result, causing greater social problems. On the other hand, Korea's educational expansion has been coherent with economic development.

In light of these circumstances, how does Korea's relationship between education and economic development differ from that of other developing countries? According to previous studies (McGinn et al., 1980), among the few factors that contributed to Korea's rapid economic development along with the level of schooling are: (1) low educational cost per student; and (2) decreased government share of the educational burden.

The low unit cost of education has been partly due to overcrowded classrooms with 60 or more students. Teachers have managed to maintain control of these classrooms by evoking the long cultural tradition of respect for teachers and through strict discipline. Moreover, the low wages of teachers is another factor that accounts for low educational costs. Teaching is a highly respected profession in Korea, therefore, there are considerable psychological benefits to the profession. Second, teachers receive financial and material rewards through additional work as tutors for after-school exam preparations. Third, the growing problem of high school and college graduates unable to find employment in more remunerative professions has created a pool of low-cost labour for education.

The second factor is that the government's share in the burden of educational expenditures is less than that of other developing countries. High parental demand for the education of their children compensates for government's small share in the burden of educational costs such as the provision of educational facilities and teachers. This has resulted in mainly private contributions to the maintenance of public education, which at times amounts to nearly 50 percent of total educational spending. According to a 1994 study by the Korean Educational

Development Institute, total private educational expenditures are 1.04 times larger than spending on public education.

Thus the huge amount spent on private education is one of the greatest problems facing the Korean educational system. Table 7.5 illustrates spending on private education per student by school level in comparison to the average household income of urban wage earners. As the government requires mandatory primary school education of all children, parents spent on average 1.35 million won in primary school education in 1994, which amounted to 6.6 percent of total household income. The burden of private educational expenditure up to secondary education has been lessened relative to household income by dint of rapidly increasing income over the past three decades. On the other hand, the cost of tertiary education in absolute terms has increased with the passing of time. In 1977, parents spent 54.2 percent of household income on their child's college education, which decreased to 12.9 percent in 1994.

The above tables show the amount of educational spending at each school level in comparison to average household income. Since not all households have children in college, the figures do not represent the exact financial burden of educational spending among average households. Therefore, in order to calculate the financial burden on an average household, the proportion of educational expenditures to total consumption expenditures for an average household is shown (Table 7.6).

Over the past three decades, the propor-

Table 7.5
Ratio of Private Educational Expenditures Per Student to Household Income
 (Unit: 1,000 Won, %)

Year	Household income	Primary school	Middle school	Academic high school	Vocational high school	College & University
1977	1,271	11.2	13.3	21.6	22.1	54.2
1982	3,763	6.4	8.1	11.4	10.3	33.9
1985	5,085	10.5	11.3	18.2	12.4	21.9
1990	11,319	9.3	8.4	9.9	7.1	15.0
1994	20,416	6.6	7.5	8.6	4.9	12.9

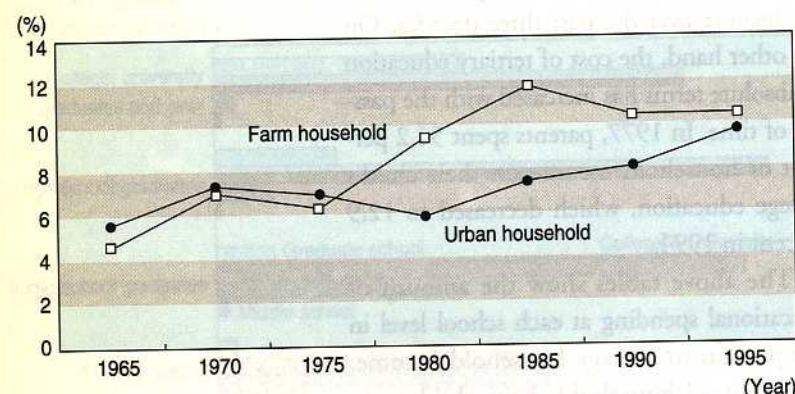
Source: Korean Educational Development Institute, *A Study on Educational Investment and Rate of Return*, 1994.

Table 7.6
Ratio of Household Spending on Education to Total Consumption Expenditures
(Unit: Won, %)

Year	Urban household			Farm household		
	Annual consumption expenditures	Annual educational expenditures	Ratio of educational expenditures	Annual consumption expenditures	Annual educational expenditures	Ratio of educational expenditures
1965	105,120	5,688	5.4	100,492	4,482	4.5
1970	311,880	22,320	7.2	207,766	14,185	6.9
1975	700,200	47,520	6.8	616,280	38,443	6.2
1980	2,151,288	125,676	5.8	2,138,323	200,283	9.4
1985	3,804,300	279,960	7.4	4,690,854	555,338	11.8
1990	8,227,944	664,704	8.1	8,227,213	862,436	10.5
1995	15,190,680	1,484,004	9.8	14,781,890	1,553,337	10.5

Source: National Statistical Office, *Social Indicators in Korea*, 1996.

Figure 7.2
Ratio of Household Expenditures on Education to Total Consumption Expenditures



Note: in the above chart, 'household' should be plural in both cases - 'households'

tion of educational expenditures to household income has increased slowly. In the 1960s, when income was less than US\$ 500, educational spending per household comprised about 5 percent of total household expenditures. In 1996, educational expenditures totaled more than 1.5 million won, about 10 percent of household consumption expenditures in both urban and rural areas. The educational burden is larger than one-third of housing expenditures. This clearly indicates that Korea's high level of schooling is supported by the parents' great willingness to make considerable financial sacrifices for their children's education.

Private educational expenditures take several forms. In the elementary schools, it has long been customary to supplement bud-

getary allocations with voluntary parental contributions made through Parent-Teacher Associations. Out-of-school expenditures include the usual cost of books, school supplies, transportation, and extra-curricular activities. In addition, large sums are frequently spent on after-school tutoring to prepare students for future entrance examinations. In spite of the steep rise in the cost of college education, the college enrolment rate increased sharply over the period as mentioned above. It reflects parents' strong aspirations for providing educational opportunities for their children, which explains why such rapid educational growth has been possible with such a relatively small portion of spending on public education. Table 7.7 shows other statistics indicating the large proportion of private institutions in the nation's educational system. Only in primary and middle school levels, where there has been a public commitment to universal education, has the government acted to increase spending to increase school enrolment. The majority of primary and middle school students are expected to enroll in public schools. In the case of high schools, private schools hold a larger number of students than public schools. The role of private education becomes even larger at the college level, where only one-third of students attend public colleges and universities.

Because of massive spending on private education, the government's share of educational expenditures and pushing for higher education is minute. The GDP share of public educational expenditures has hovered around 5 percent over the past three decades (Table 7.8), less than that of many countries with equivalent income. The ratio of spending on public education to total government expenditures is less than 15 percent, which is also less than that of other countries. As shown in Table 4.8, Korea dedicated the lion's share of public spending to primary and secondary education, while only one-fifth of its spending went to higher education up till the late 1970s. This reflects the government's educational policy, which puts

top priority on universal basic education.

In contrast, the governments of other developing countries such as Brazil, Bangladesh, and Uruguay allocate a large share of public spending to higher education. Since the Korean government has put much more emphasis on quantity rather than quality, as is reflected in its pattern of budget use and overcrowded classrooms, there is great concern regarding the objectives and effectiveness of education. Nevertheless, in hindsight, the policy of aiming for universal education at the primary and secondary levels has been appropriate for providing a sufficient pool of reasonably low-cost but well-educated workers needed for rapid economic development.

7.3 Human and Physical Educational Resources

Considering that the first priority of educational policy in Korea has been to provide primary and secondary education for everyone, educational personnel and physical resources have been relatively poor in light of the high rate of enrolment. With the rapid expansion of educational opportunities, the population structure has been a key factor in determining educational resources. As shown in Figure 7.3, the number of primary-school-age children from 6 to 11 years old reached a peak in 1980, and has decreased continuously since then. The secondary-education-age population of 12 to 17 years old reached a peak in 1985, while the tertiary-education-age population of 18 to 21 years old topped out in 1990. Therefore, it can be easily inferred that in relative terms educational resources per student have increased since the early 1980s for primary education, and since the middle 1980s for secondary education.

The rapid population growth, particularly with the baby boom in the late 1950s and 1960s, aggravated the shortage of resources during the 1960s and 1970s. In primary education, which has been mandatory, the shortage of teachers and classrooms was seri-

Table 7.7
Number of Students by School Level
(Unit: Person, %)

Year	Primary school			Middle school		
	Total	National & Public	Private	Total	National & public	Private
1970	5,749,301	98.9	1.1	1,318,808	51.4	48.6
1975	5,599,074	98.8	1.2	2,026,823	59.4	40.6
1980	5,658,002	98.7	1.3	2,471,997	61.2	38.8
1985	4,856,752	98.5	1.5	2,782,173	68.2	31.8
1990	4,868,520	98.6	1.4	2,275,751	71.4	28.6
1995	3,905,163	98.4	1.6	2,481,848	76.0	24.0
1996	3,800,540	98.4	1.6	2,379,983	76.2	23.8

Year	Academic high school			Vocational high school		
	Total	National & Public	Private	Total	National & public	Private
1970	315,367	39.6	60.4	275,015	51.9	48.1
1975	648,149	39.6	60.4	474,868	47.6	52.4
1980	932,605	38.2	61.8	764,187	43.5	56.5
1985	1,266,840	40.2	59.8	885,962	38.5	61.5
1990	1,473,155	38.3	61.7	810,651	38.3	61.7
1995	1,246,427	37.5	62.5	911,453	43.3	56.7
1996	1,303,874	38.4	61.6	939,433	44.5	55.5

Year	Junior college			College & University		
	Total	National & Public	Private	Total	National & public	Private
1970	40,537	59.0	41.0	146,414	24.6	75.4
1975	70,791	38.5	61.5	208,986	27.2	72.8
1980	174,476	20.8	79.2	402,979	28.6	71.4
1985	242,117	9.5	90.5	931,884	26.1	73.9
1990	323,825	8.3	91.7	1,040,166	24.5	75.5
1995	569,820	3.8	96.2	1,207,385	26.1	73.9
1996	642,697	3.5	96.5	1,287,315	25.5	74.5

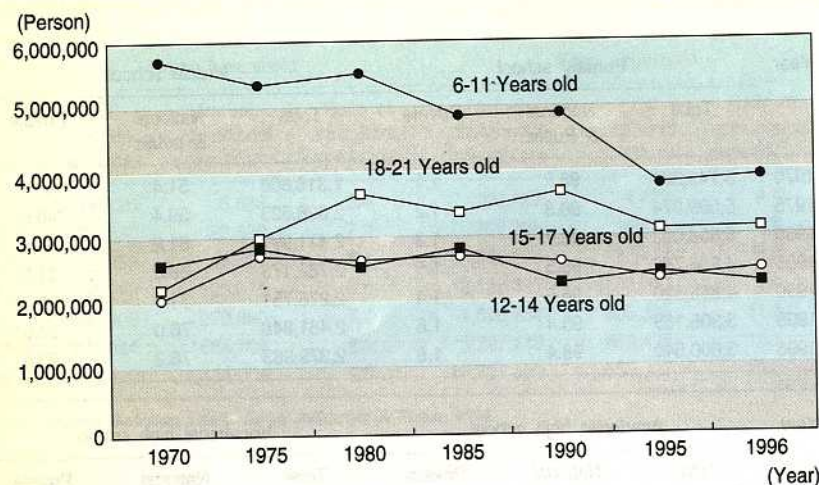
Source: Korean Educational Development Institute, *Educational Indicators in Korea*, 1996.

Table 7.8
Ratio of Public Educational Expenditures to GDP
(Unit: 1,000,000 Won, %)

Year	Total		Primary & secondary education		Higher education ¹⁾	
	Total expenditures	Ratio to GDP	Total expenditures	Ratio to GDP	Total expenditures	Ratio to GDP
1970	145,465	5.2	117,829	4.3	27,636	1.0
1975	394,830	4.3	312,125	3.4	82,705	0.9
1980	2,018,062	6.0	1,482,905	4.4	535,157	1.6
1985	4,599,950	5.7	3,236,998	4.0	1,362,952	1.7
1990	8,523,807	4.7	6,145,394	3.4	2,378,413	1.3
1995	19,215,055	5.5	12,793,310	3.6	6,421,745	1.8

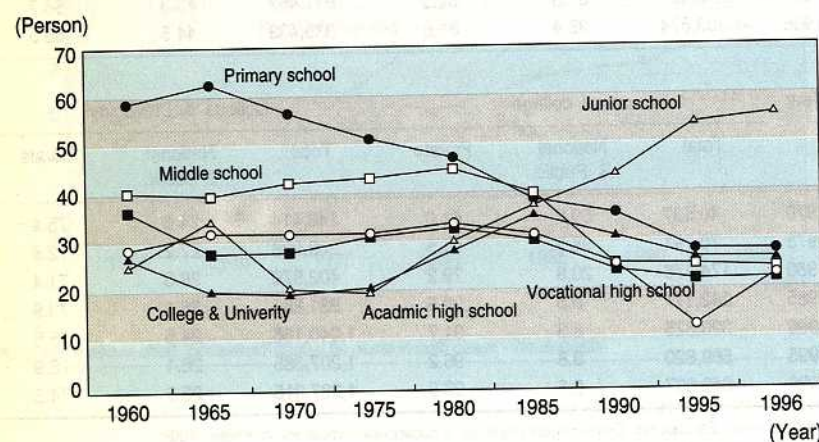
Note: 1) Higher education includes junior colleges, schools of education, college and universities. Source: Bank of Korea, *Annual Statistics Yearbook*, 1980, 1996. Bank of Korea, *National Accounts*, 1994.

Figure 7.3
School Age Population



Source: National Statistical Office, Population Census Report, annual.

Figure 7.4
Number of Students per Teacher



Source: Korean Educational Development Institute, Educational Indicators in Korea, 1996.

ous. Figure 7.4 shows the pupil-teacher ratio over the past three decades.

Until the late 1970s, a teacher taught in a classroom with more than 60 students. The pupil-teacher ratio stood at 58.8:1 in 1960, and peaked at 62.4:1 in 1965. Since then, it has decreased continuously. In the 1990s, as the total fertility rate fell below the replacement level, the pupil-teacher ratio no longer represented a problematic issue in education, meaning that as far as primary education is concerned, the improvement of the human resource aspect of education has been achieved mainly by force of change in popu-

lation structure rather than through massive increases in educational investments. The pattern of improvement in secondary education is similar to that of primary education. What is different in secondary education is that the baby boom generation of the 1960s maximised the resource squeeze not in the mid-1960s but rather in the mid-1970s, an effect that has since waned. The pupil-teacher ratio peaked at 43.2 in middle school and 31.7 in high school in 1975. In 1996, as a result of the change in population structure, the pupil-teacher ratio was 23.8 in middle schools and 22.6 in high schools. In the case of tertiary education, the height of the resource squeeze came in 1985, with a record pupil-teacher ratio of 35.4:1. This is partly because human resources failed to keep pace with the increase of educational demand for college-level education that resulted from income growth. As a matter of fact, the change in population structure has contributed to the continued improvement of human resources in college education since the late 1980s.

As a representative indicator of physical resources, class size by educational level is examined (Table 7.9). The number of pupils in a class is far larger than the desired pupil-teacher ratio. In primary schools, the average class size was 65.4 in 1965. Since then class size has shrunk. However, in 1996, the class size was 35.7, still too large to enable quality learning to take place. As mentioned above, overcrowded classrooms are possible because pupils are relatively easy to discipline due to the Confucian cultural tradition. While the class size in primary schools decreased substantially as the 1990s began, the problem of overcrowded classrooms in higher educational institutions has not been properly addressed until now. Class size in middle schools exceeded 60 students until the mid-1980s. As late as 1996, almost 50 students were jammed into classrooms. The government's strategy to emphasise universal primary education is reflected in the difference in the degree of improvement by school level. Between 1970 and 1996, class size in

primary schools dropped by 43 percent, with a 26-percent decline for middle schools, and 18 percent for high schools. As a result of rapid urbanisation, overcrowded classes are prevalent mainly in large metropolitan areas while class sizes are relatively small in rural areas. For example, in cities such as Seoul, Pusan, Tague, and Incheon, class sizes in primary schools number more than students in 1996, while in mainly rural areas such as Cheonam and Kangwon, the number stood at only 25 or so.

In education, the "double-shift system school" is often used as an indicator of poor physical resources. The rapid expansion of educational opportunities resulted in double-shift classrooms as well as in overcrowded classes. As shown in Table 7.10, double-shift system schools and classes were prevalent in the 1960s. This system still remains in lower level primary school classes, while it has been eradicated in the upper level classes. 1,395 classes in 209 primary schools operated under the double shift system in 1996, most of which were concentrated in major cities.

7.4 Content and Outcome of Education

Quantity of education has been emphasised in the course of Korea's development. Its quantity-oriented development strategy is reflected in long school hours as well as in the rapid rise in enrolment. Many people state that one of the key factors in Korea's rapid development is industriousness. Korean workers are known for their long working hours. In the same way, Korean students stay longer hours in school than any other countries' students. By law, students are scheduled to complete at least 1,054 school hours per year in primary school, and at least 1,156 school hours per year in middle and high school. In addition, most students must spend many hours on after-school studying in or out of school to prepare for a series of entrance exams. Since education is the only way to get ahead in the homogeneous society of Korea, both parents and students are eager to obtain higher edu-

Table 7.9
Average Number of Students Per Class
(Unit: Person)

Year	Primary school	Middle school	Academic high school	Vocational high school
1965	65.4	60.7	59.8	53.5
1970	62.1	62.1	60.1	56.1
1975	56.7	64.5	59.8	57.0
1980	51.5	65.5	59.9	59.6
1985	44.7	61.7	58.0	55.5
1990	41.4	50.2	53.6	51.5
1995	36.4	48.2	48.0	47.9
1996	35.7	46.5	48.9	48.3

Source: Korean Educational Development Institute, Educational Indicators in Korea, 1996.

cation, which guarantees better jobs. This strong will to pursue higher education leads to the long school hours.

On the other hand, it seems that the nation pays less attention to improving the quality and content in the development of education. An individual's progression toward higher education relies heavily on national examinations and the tradition of a rote learning system. In schools, the learning system mostly deals with memorising facts and cramming rather than diversifying students' learning ability and stressing the ability to think for oneself. Individuality and creativity can hardly be expected from overcrowded classrooms that require strong discipline, and where teachers do not give much individual attention to students.

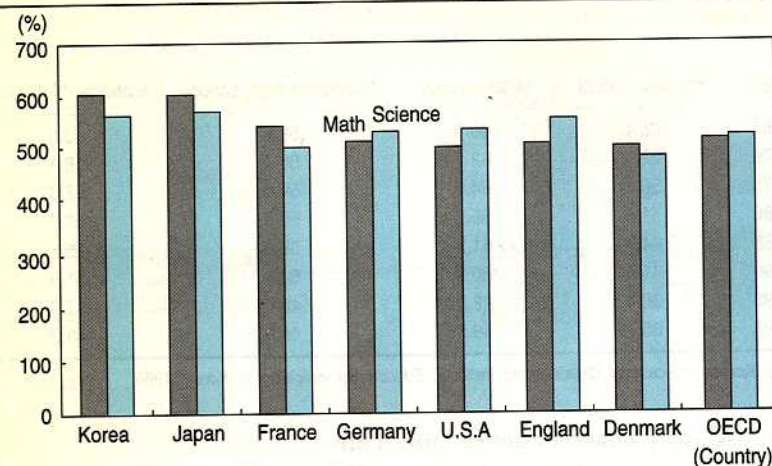
Despite such problems in the learning system, Korean students possess a high level of knowledge. According to a comparison

Table 7.10
Double-Shift Primary Schools and Classes by Grade Level
(Unit: Numbers)

Year	Schools	Classes							
		Total	1st grade	2nd grade	3rd grade	4th grade	5th grade	6th grade	Multiple grade
1965	—	14,262	3,886	5,174	3,450	1,457	133	35	127
1970	2,672	7,457	2,144	3,226	1,526	363	61	21	116
1975	297	1,287	407	581	241	43	4	0	11
1980	941	10,753	2,852	4,347	2,464	820	179	44	47
1985	794	5,455	2,376	2,028	695	162	10	1	183
1990	1,060	7,941	3,696	3,211	1,012	16	0	0	6(28)
1995	240	1,626	906	592	128	0	0	0	0
1996	209	1,395	761	550	84	0	0	0	0

Source: Korean Educational Development Institute, Educational Indicators in Korea, 1996.

Figure and Table 7.5
International Comparisons of Student Achievement



Country	Mathematics			Science		
	Mean	Male	Female	Mean	Male	Female
Korea	607	615	598	565	576	552
Japan	605	609	600	571	579	562
France	538	542	536	498	506	490
Germany	509	512	509	531	542	524
U.S.A.	500	502	498	534	539	530
England	506	509	505	552	563	543
Denmark	502	512	495	478	495	464
OECD average	516	519	513	523	532	515

Note: The mean of each subject is calculated based on an 8th-grade level (second year of middle school).
Source: OECD, *Education at a Glance*, 1996.

Table 7.11
Employment Rate based on Schooling
(Unit: %)

Year	Academic high school		Vocational high school	
	Total	Female	Total	Female
1970	17.1	17.9	55.6	55.2
1975	16.7	18.7	22.1	53.5
1980	15.6	21.3	27.7	62.8
1985	16.1	24.2	29.8	65.6
1990	18.5	27.1	83.6	86.7
1995	26.2	28.5	90.8	91.1
1996	24.7	25.9	91.6	91.4

Year	Junior college		College, University	
	Total	Female	Total	Female
1970	78.5	78.4	61.3	50.5
1975	36.8	35.6	62.5	55.4
1980	40.8	50.6	65.0	55.2
1985	44.2	49.9	45.7	31.7
1990	58.6	68.2	53.6	42.6
1995	66.7	70.9	59.6	47.8
1996	72.6	75.3	62.1	53.4

Source: Korean Educational Development Institute, *Educational Indicators in Korea*, 1996.

between Korean students and international students from 44 participating countries around the world by the International Association for the Evaluation of Educational Achievement, Korean students ranked highest in mathematics and third in science. Moreover, Korea was equal to Japan or higher than most other OECD countries (Figure 7.5)

One of the representative indicators of the quality of education is delinquency among students. Until 1970, delinquency was rare and remained at the level of relatively light misdemeanors. Since then the delinquency rate has been increasing rapidly. In 1995, 82,442 students were classified as delinquents, a figure five times larger than in 1975 (16,655 persons). Besides the increase in frequency, delinquent behaviour has become more serious as well. As shown in Figure 7.6, the proportion of assault and battery is decreasing, while serious crime has been increasing.

One objective of education is to provide labour markets with workers equipped with the required knowledge and skills. How well does the Korean educational system meet this objective? Employment rates of graduates are a representative indicator of the effectiveness of Korea's education. These rates are the ratio of the employed to the waiting-to-be-employed; the waiting-to-be-employed is calculated by subtracting the number of the employed from the number of graduates. Table 7.11 shows the trend for employment rates of graduates by school level for the past three decades. The trends reveal an astounding number of high school graduates with difficulty in finding a job. Their employment rate had been less than 20 percent until 1990 despite increasingly higher employment. This induces people to desperately pursue a higher education, which incurs long afterschool hours of studying in school or at private institutes.

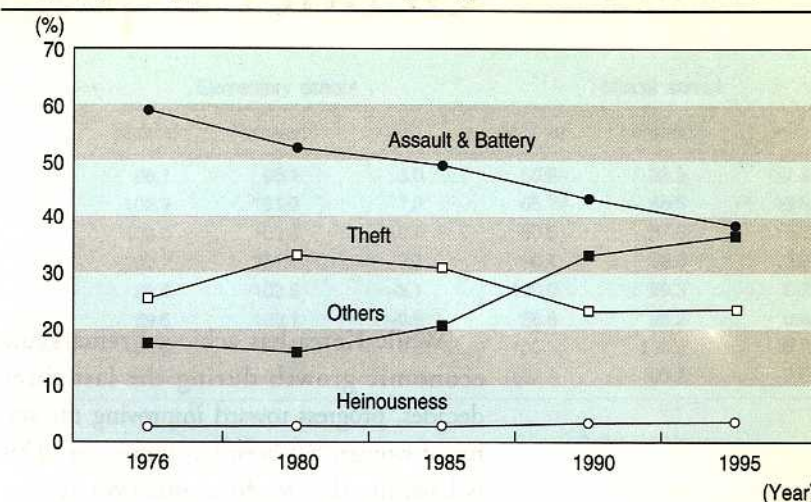
In comparison to the employment rate for high school graduates, for college and university graduates it stands higher than 60 percent. The reason why the employment

rate dropped in the early 1980s is because of the increased number of students within a short period of time, followed by increased numbers of college and university graduates. As a matter of fact, an economic downturn in those years resulted in an overall job squeeze. Entering the mid-1990s, the employment rate recovered its pre-1980 level. Vocational high school and junior college graduates have recorded the highest rate of employment over the period.

The great eagerness to pursue higher education is due to the fact that higher education guarantees better jobs and a secure life after graduation. In theory, the pay gap is assumed to reflect the gap in the marginal productivity of education in truly competitive markets.

Until the 1980s, salaries of college and university graduates were twice those earned by high school graduates (Table 7.12). Middle school graduates earned at a rate less than two-thirds that of high school graduates. In the course of time, the gap has narrowed. In recent years, it appears that graduates of the lower levels of education have been earning wages similar to those of college and university graduates. For example, middle school graduates earned less than high school graduates, by a factor of 0.09. Junior college graduates also earned higher salaries, by 0.09 times the amount. However, the salary gap still remains large. In 1995, college and university graduates earned 1.56 times more than high school graduates. It is hard to determine how large a pay gap is fair and appropriate between different levels of schooling. As the pay gap between higher and lower education decreases, the extremely strong desire of Koreans to earn college and university degrees will be adjusted in accordance with new labour markets.

Figure and Table 7.6
Frequency and Types of Student Delinquency



Note: in the above chart, "Heinousness" should be "Serious Crimes"

(Unit: Number, %)

Year	Total		Assault & battery		Theft	
	Number	Rate	Number	Rate	Number	Rate
1976	16,655	100	9,803	58.9	4,041	24.3
1980	26,615	100	13,954	52.4	8,563	32.2
1985	41,732	100	20,478	49.1	12,582	30.1
1990	55,026	100	23,727	43.1	12,275	22.3
1995	82,442	100	31,491	38.2	18,552	22.5

Year	Heinous Crime		Others	
	Number	Rate	Number	Rate
1976	140	0.8	2,671	16.0
1980	365	1.4	3,733	14.0
1985	584	1.4	8,088	19.4
1990	1,208	2.2	17,816	32.4
1995	2,140	2.6	30,259	36.7

Source: National Statistical Office, *Social Indicators in Korea*, 1996.

Table 7.12
Wage Differentials by Level of Schooling
(Unit: Won, %)

Year	Middle school graduates	High school graduates	Junior college graduates	College & University graduates
1980	68.8	100 (180,919)	146.3	228.5
1985	74.4	100 (303,049)	129.8	226.5
1990	83.3	100 (569,394)	117.4	185.5
1995	87.2	100(1,100,306)	108.4	155.9

Source: Ministry of Labour, *Survey Report on Wage Structure*, 1996.

While Korea has achieved remarkable economic growth during the last three decades, progress toward improving the status of women has been less impressive. This is basically due to discrimination against women, which stems from a deeply rooted Confucian male-oriented cultural tradition and patriarchal family system. Women status has been improving their status slowly but steadily over the period. However, the speed of improvement varies between different aspects of social life. The relative status of women has improved more rapidly in the development of their abilities than in the use of these abilities in social participation. Gains made by women in health and education have outpaced those made by men. Opportunities for educated and health women to participate in social, economic and political life have nevertheless increased very slowly. The social status of uneducated and unhealthy women, particularly among the elderly, also remains at a low level with little hope of improvement in the near future.

Table 8.1
Years of Schooling by Sex
(Unit: Years)

Year	Average	Males	Females
1960	3.81	4.78	2.92
1966	5.03	6.19	3.97
1970	5.74	6.86	4.72
1975	6.62	7.61	5.70
1980	7.61	8.67	6.63
1985	8.58	9.66	7.58
1990	9.54	10.55	8.58
1995	10.14	11.09	9.26

Source: Korean Educational Development Institute, *Educational Indicators in Korea*, annual.

8.1 Women and Education

In the traditional Korean society, only men were given a formal education, while women fulfilled their homemaking and childbearing duties to maintain the family line. It was not until the introduction of a compulsory education system that educational opportunities opened up to women, which then underwent full-scale expansion. However, in terms of acquiring higher education, opportunities for women have been much slimmer than for men.

In 1995, average years of schooling totaled 11.09 years for males and 9.26 for females, reflecting a gender gap of 1.83 years, as against 4.78 years and 2.92 years, respectively, in 1960, with a gender gap of 1.86 years (Table 8.1). Even with the 6.31-year increase for males and 6.34 years for females over the past 35 years, the gender gap in schooling has not shown much improvement over the years, diminishing by a mere 0.03 years.

Despite minor reductions in the gender gap as regards schooling, educational opportunities for the younger generation have increased immensely both for females and males in primary and secondary education. As early as the 1960s, more than 90 percent of all children eligible for schooling were enrolled in primary schools (Table 8.2). Moreover, there was no significant gender-gap difference in enrolment, not even in the early 1960s. This owes much to the successful educational policy that emphasised universal education regardless of gender at the primary level since 1948, when primary education was made compulsory. The gender

gap for secondary education, on the other hand, decreased at a slower pace. As for middle school, the enrolment rate for women was virtually equal to the rate for men in the early 1980s when men's enrolment rate reached 90 percent. Then, in the early 1990s, when the highschool enrolment rate for men also rose to 90 percent, the opportunity for women to obtain a high school education became almost the same as for men.

In regard to college and university education, the opportunities for women have lagged far behind those for men throughout the past 35 years. Until the early 1980s, women had fewer than one-third of the opportunities to attend colleges and universities than did men. Surprisingly, the gender gap for higher education enrolment has been increasing over the past three decades along with the rapid increase in the average enrolment rate for men. The gender gap for enrolment in higher education increased from 8.9 percent in 1966 to 32.5 percent in 1996. In 1996, women's enrolment rate in colleges and universities was 45.1 percent, or only 58 percent of the level for men.

The reason why women have fewer educational opportunities than men is that parents have different expectations regarding the level of education for their sons than for their daughters. As shown in Table 8.3, parents' expectations reflect a substantial gap between sons and daughters, especially in terms of the parents' schooling: the more educated the parents, the higher the expected level for their children. However, there is no significant difference between highly educated and less educated parents in the pattern of expecting higher education more often for sons than for daughters. In recent years, the expected level has become higher for both sons and daughters.

In addition to these different expectations, parents' reasons for providing education differ for sons and daughters. In the case of sons, parents believe that education will offer better jobs and build good character and ability (Table 8.4). For daughters, on the

Table 8.2
Enrolment Rate by Schooling Level and Sex
(Unit: %)

Year	Elementary school			Middle school		
	Male(a)	Female(b)	a-b	Male(a)	Female(b)	a-b
1966	98.1	95.1	3.0	50.9	33.0	17.9
1970	102.9	101.9	1.0	65.1	46.5	18.6
1975	103.0	103.4	-0.4	80.8	67.0	13.8
1980	100.7	101.4	-0.7	96.4	92.6	3.8
1985	99.4	102.5	-3.1	100.0	99.3	0.7
1990	99.5	100.1	-0.6	98.6	98.2	0.4
1995	101.9	100.6	1.3	100.3	100.9	-0.6
1996	96.5	97.8	-1.3	102.6	103.2	-0.6

Year	High school			College / University		
	Male (a)	Female (b)	a-b	Male (a)	Female (b)	a-b
1966	35.0	19.6	15.4	14.0	5.1	8.9
1970	36.7	24.1	12.6	14.6	5.5	9.1
1975	51.1	35.8	15.3	17.5	6.7	10.8
1980	74.4	62.2	12.2	24.3	8.4	15.9
1985	81.9	74.5	7.4	50.2	22.9	27.3
1990	90.5	83.8	6.7	50.0	23.9	26.1
1995	90.3	89.4	0.9	69.7	38.6	31.1
1996	90.1	89.5	0.6	77.6	45.1	32.5

Sources: Korean Women's Development Institute, *Statistical Yearbook on Women*, each year.
National Statistical Office, *Social Indicators in Korea*, each year.

Table 8.3
Expected Level of Education for Children in terms of Parental Schooling - 1977 and 1993
(Unit: %)

Parental schooling	Middle school		High school	
	Son	Daughter	Son	Daughter
1977				
Primary school graduates and under	8.5	25.7	49.1	49.7
Middle school graduates	3.0	12.1	30.1	48.9
High school graduates	0.9	4.8	16.8	38.3
College/University graduates and over	0.1	0.8	3.3	11.9
1993				
Primary school graduates and under	5.4	11.3	35.1	45.0
Middle school graduates	0.4	1.0	10.6	18.7
High school graduates	0.1	0.1	3.7	7.5
College/University graduates and over	0.0	0.2	1.0	1.8

Parental Schooling	College/University		Graduate school	
	Son	Daughter	Son	Daughter
1977				
Primary school graduates and under	40.9	17.8	0.2	0.14
Middle school graduates	66.1	37.2	0.6	0.1
High school graduates	81.2	55.8	1.1	0.5
College/University graduates and over	92.8	85.0	3.8	2.3
1993				
Primary school graduates and under	55.0	42.0	4.5	1.8
Middle school graduates	75.6	72.8	13.4	7.5
High school graduates	71.6	76.1	24.7	16.3
College/University graduates and over	53.3	64.2	45.7	33.8

Source: Korean Women's Development Institute, *Statistical Yearbook on Women*, 1996.
National Statistical Office, *Social Indicators in Korea*, 1996.

Table 8.4
Reasons for Educating Children in terms of Parental Schooling
(Unit: %)

Parental schooling	Good personality		Good job	
	Son	Daughter	Son	Daughter
1990				
Primary school graduates and under	29.1	26.2	42.7	16.1
Middle school graduates	41.9	37.0	32.7	11.4
High school graduates	52.4	46.2	25.7	7.5
College/University graduates and over	64.0	55.1	18.4	6.0
1993				
Primary school graduates and under	23.0	22.9	51.4	22.1
Middle school graduates	29.3	29.6	41.0	15.4
High school graduates	36.8	37.0	34.0	11.6
College/University graduates and over	42.7	42.9	27.8	8.2

Parental schooling	Development of ability and tastes		Advantage for marriage and connections	
	Son	Daughter	Son	Daughter
1990				
Primary school graduates and under	3.9	10.2	8.7	35.2
Middle school graduates	5.6	12.6	7.2	29.6
High school graduates	7.9	15.7	8.3	26.2
College/University graduates and over	10.5	19.4	6.0	18.6
1993				
Primary school graduates and under	6.1	10.5	7.0	32.5
Middle school graduates	9.9	15.9	8.6	29.2
High school graduates	14.7	22.2	9.9	25.2
College/University graduates and over	20.3	28.2	7.9	19.3

Parental schooling	Compensate for parent's lack of education		Others	
	Son	Daughter	Son	Daughter
1990				
Primary school graduates and under	15.3	12.1	0.3	0.2
Middle school graduates	12.4	9.2	0.2	0.2
High school graduates	5.5	4.2	0.2	0.2
College/University graduates and over	0.9	0.6	0.2	0.2
1993				
Primary school graduates and under	12.4	11.7	0.2	0.3
Middle school graduates	10.8	9.6	0.3	0.2
High school graduates	4.3	3.6	0.3	0.3
College/University graduates and over	0.7	0.7	0.6	0.7

Source: Korean Women's Development Institute, *Statistical Yearbook on Women*, 1996.

other hand, parents believe that a good education is an advantage that will see them well-married and provide connections that will be helpful in the job market. The difference in parent's attitude towards son and daughter's education has been decreasing rapidly in the 1990s. Nevertheless, it is felt that this traditional mindset deeply rooted in the Korean culture and family system will

hamper the goal of gender equality in the near future.

The presence of women in educational institutions has been increasing over the past three decades. The advancement of female teachers is outstanding in lower education. In primary and middle school the majority of teachers are female. However, only one-fifth of them teach in high schools, colleges and universities (Table 8.5). In contrast to the substantial advancement of female teachers in primary and secondary education, the general status of women in educational institutions remains very low. For example, in 1995 the proportion of female school principals was only 4.2 percent in primary school, 6.7 percent in middle school, and 2.6 percent in high school.

Education functions as a transmitter of social norms and morals from one generation to the next. Through school curricula and teachers as gender models, concepts, attitudes, and sex role stereotypes have been passed down through generations. In Korean schools, girls are taught to be obedient and to become good homemakers, while boys are taught to be independent and to become active participants in economic and social affairs. In 1988, the contents of textbooks were revised to reflect an equal role between the sexes. Technical crafts for males and home economics for females were merged into one subject. In the future, textbooks must be further modified to eliminate the portrayal of females as the weaker sex.

Differences also exist in the types of education that male and female students receive in high school and in their fields of concentration in college. Girl's access to vocational and technical education has been influenced by cultural practices. There is an apparent gender gap in the enrolment at vocational high schools by course. Among vocational high school students, the most popular subjects are bookkeeping and secretarial training for girls (75.6 percent) and engineering and craftsmanship for boys (66.6 percent). These differences are more noticeable in colleges. In terms of percentages for women, arts/physi-

cal education recorded the highest number (75.3 percent), followed by teacher training (74.1 percent), and humanities (62.4 percent) in 1995. In contrast, the proportion of females in social and natural sciences were 29.5 percent and 29.7 percent respectively, for the same year. Particularly in engineering, the proportion was as low as 7.6 percent.

When considering the fact that engineering or social science majors have better prospects in the job market, this enormous gender gap should be corrected in order to advance the status of women in the long run. It is desirable that more women be promoted to administrative positions of responsibility, that measures be enforced to reduce current male dominance at higher educational institutions, and that sexually discriminative contents and language in textbooks be eliminated. Education, formal or non-formal, should be expanded to accommodate goals that guarantee women's participation in economic activities as well as in civic and public affairs as equal citizens.

In order to correct traditionally biased views against women, the government has asked national and other public educational and training institutions to include women's studies in their programmes for government workers. As a result, 18,463 government employees attended women's studies courses in 1995 alone. At present, 33 national and other public training institutions are offering courses designed to sensitise public employees on women's issues as an integral part of their curricula. The government has also developed and distributed career education programmes for high schools with the aim of encouraging female students to choose science, civil engineering, carpentry, mechanics, and the like as their career fields.

8.2 Women and Economic Activities

To a great extent, rapid economic development has been attributed to cheap labour by female workers in the manufacturing sector. Skilled, hard-working young women made possible the success of export-oriented

Table 8.5
Percentage of Female Teachers
(Unit: %)

Year	Primary school	Middle school	High school		College & University
			Academic	Vocational	
1965	25.5	16.1	11.9	5.0	11.4
1970	29.1	18.6	12.2	5.9	12.6
1975	33.7	25.1	14.2	10.8	14.8
1980	36.8	32.8	17.2	17.0	15.7
1985	43.1	38.5	19.6	21.4	16.5
1990	50.1	46.5	22.1	24.3	17.6
1995	55.6	49.8	22.2	26.1	21.3
1996	57.2	50.9	22.9	26.9	21.9

Source: National Statistical Office, *Social Indicators in Korea*, annual.

light industry in the early stages of development. The employment women is conditioned by patriarchal norms that relegate them to the lowest paying jobs, limit their job tenure and mobility, and justify their relatively lower wages.

During the early stage of economic development, young female workers were primarily found in unskilled jobs in labour-intensive manufacturing industries. Jobs for women in manufacturing have been concentrated in export industries. In the 1970s, when there was an exodus of males and young females from rural areas to cities and industrial areas, in the rural areas the aged and middle-aged women had to make up for labour shortages caused by this rural flight from farms. In the 1980s, the majority of married women from the urban poor strata were absorbed in low-level jobs in the manufacturing and service sectors. Also, as industries advanced, demand for female workers increased and spread to highly technical, administrative, and managerial sectors. However, in the overall employment structure, women in managerial and professional positions still form a small minority, while the majority of female workers are engaged in low-paid, unskilled manual labour and service sectors.

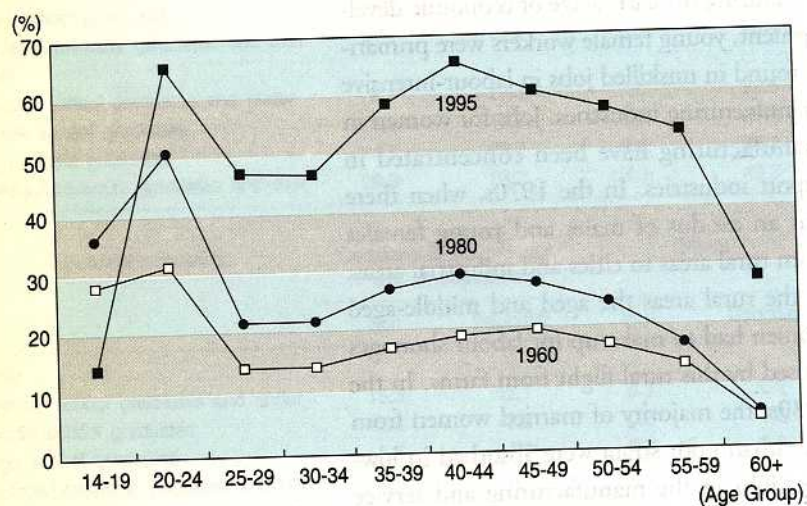
The economically active female population aged 15 years and above increased four-fold, going from 2,156,000 in 1960 to 8,568,000 in 1996. At the onset of development, women numbered less than 30 percent of the labour force, and comprised less

Table 8.6
Labour Force Participation Rate
(Unit: 1,000 Persons, %)

Year	Participation rate		Economically active population		
	Male	Female	Total	Female	Female as % of Total
1960	73.5	26.8	7,543	2,156	28.6
1966	78.6	31.5	8,654	2,679	31.0
1970	72.5	37.7	10,337	3,624	34.9
1975	77.8	45.7	13,350	5,174	38.8
1980	72.4	38.6	13,595	4,973	36.6
1985	69.6	40.6	15,554	5,969	38.4
1990	73.9	47.2	18,487	7,474	40.4
1995	76.5	48.3	20,797	8,364	40.2
1996	76.1	48.7	21,188	8,568	40.4

Sources: Economic Planning Board, *Population and Housing Census Report*, 1960, 1966, 1970, 1975, 1980, 1985.
Annual Report on the Economically Active Population Survey, 1990, 1996.

Figure and Table 8.1
Trends in Female Labour Participation Rate by Age Group



(Unit: %)

Age group	1960	1980	1995
15~19	28.6	36.5	14.6 ¹⁾
20~24	31.8	51.3	66.1
25~29	14.6	22.6	47.8
30~34	14.3	22.3	47.5
35~39	17.5	27.9	59.2
40~44	19.7	30.2	66.0
45~49	20.6	28.6	61.0
50~54	18.1	24.7	58.3
55~59	14.1	17.9	54.2
60+	5.7	5.8	28.9

Note: 1) Accounts for 14~19 years of age.
Source: Korean Women's Development Institute, *Social Statistics and Indicators on Women*, 1986, 1996.

than one-third of the entire economically active population. By 1996, however, almost half of all women aged 15 and over were engaged in economic activities, with women representing 40.4 percent of the economically active population (Table 8.6).

In Korea, the age pattern regarding the percentage of women in the labour force shows a bimodal distribution similar to the pattern in industrialised countries in the 1960s and 1970s (Figure 8.1). This pattern reflects the fact that women actively hold jobs before marriage (20-24 years old), then leave the labour market to give birth and raise their children (25-34 years old), and later re-enter the labour market (35-54 years old). Among women aged 15 to 19, economic participation has decreased due to the expansion of educational opportunities. On the other hand, economic participation by women of childbearing and childrearing ages did not increase despite a substantial rise in the number of women participating in the country's overall economic life. This fact reveals that childrearing is a great barrier for married women who want to work. It is remarkable that the participation rate of such age groups as 20 to 24 and 40 to 50 surpassed 60 percent in 1995. This pattern indicates that, where the supply of labour is concerned, if institutional supports are sufficiently provided for women during the childrearing period, more married women will be able to work.

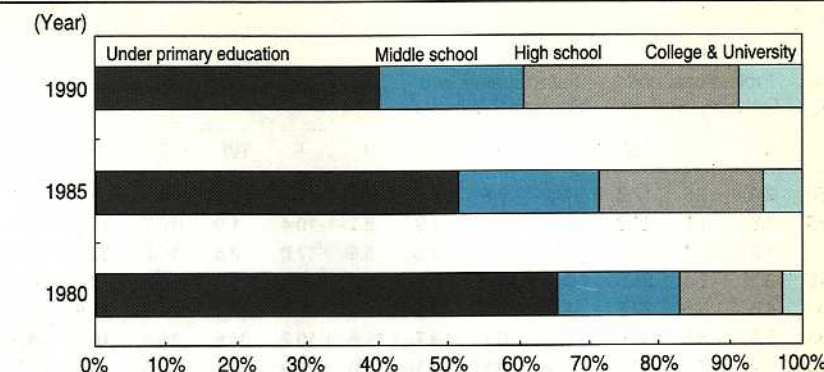
In general, most working women are less educated and take jobs to relieve household financial hardships. However, as the economic opportunity of women increased, particularly in higher education, the share of female employees with higher education increased as well. In 1990, there was a 71.1 percent increase of employment among female college or university graduates as compared to 62.6 percent decrease among primary school graduates (Figure 8.2). The pattern of women's labour force participation by educational level began to approach that of industrialised countries. That is, the more educated they are, the more likely they are to

work. In 1995, women's participation rates were 44.6 percent for middle school graduates or lower, 50.2 percent for high school graduates, 63.5 percent for junior college graduates, and 57.9 percent for college graduates. It is remarkable that the participation rate among highly educated women has been increasing rapidly. However, female college and university graduates tend to have difficulty in finding a job because employers usually prefer to hire male graduates. A large number of female college graduates cannot find positions appropriate to their educational level and often resort to underemployment in secretarial or clerical positions, or otherwise retire completely from the labour market.

In addition to the quantitative increase in economic activities regarding women, there has been a structural change in female employment as well. In 1960, the majority of employed women (69.6 percent) worked in agriculture, forestry, hunting and fishing, while 6.4 percent worked in the mining and manufacturing industry, and 24.0 percent in social overhead capital and other services. In 1995, however, more than half of employed women worked in social overhead capital and other service sectors (64.0 percent), while the proportions in primary and secondary industries were 14.7 percent and 21.4 percent respectively, (Figure 8.3).

Accordingly, types of occupation for women have gone from farming to production work to sales and services (Table 8.7). However, occupational transitions have not affected the status of women, which remains at a low level. The increase in the percentage of women in lower level service-sector jobs such as clerical, sales and service workers is remarkable. For example, the proportion of women in clerical work was only 3.8 percent in 1960, rising to 15.5 percent by 1995. On the other hand, women still have a long way to go when it comes to advancement toward upper level positions. The proportion of women among legislators, senior officers, managers, professionals, technicians, and associate professionals stood at 11.2 percent

Figure and Table 8.2
Employed Females by Schooling Level



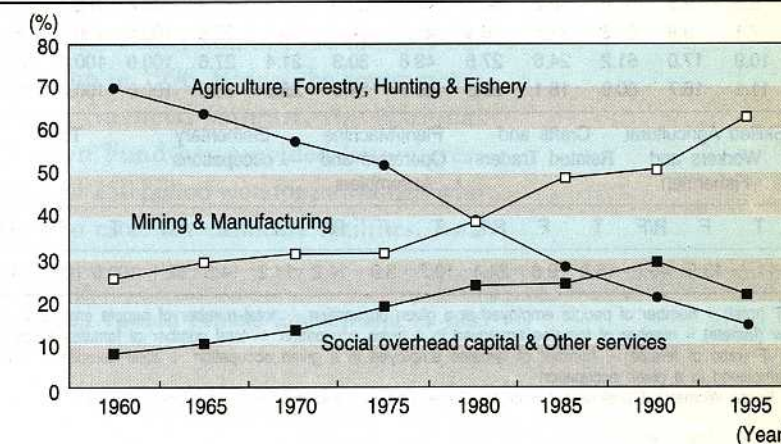
Note: in above chart first title should be "Less than primary education"

(Unit: %)

Year	Primary school And under	Middle school	High school	College/University
1980	66.0	17.1	14.5	2.4
1985	51.6	19.8	23.6	4.9
1990	40.6	20.0	31.1	8.3

Source: Economic Planning Board, *Population and Housing Census*, annual.

Figure and Table 8.3
Women Employed by Industry



(Unit: 1,000 Persons, %)

Year	Total	Agriculture, Forestry, Hunting and Fishery		Mining / Manufacturing		Social overhead capital And other services	
		Number	Rate	Number	Rate	Number	Rate
1960	2,022	1,408	69.6	129	6.4	485	24.0
1965	2,884	1,843	63.9	238	8.3	803	27.8
1970	3,578	2,046	57.2	435	12.2	1,097	30.7
1975	4,341	2,253	51.9	760	17.5	1,328	30.6
1980	5,222	2,034	39.0	1,166	22.3	2,022	38.7
1985	5,833	1,619	27.8	1,356	23.2	2,858	49.0
1990	7,376	1,495	20.3	2,081	28.2	3,800	51.5
1995	8,224	1,206	14.7	1,758	21.4	5,261	64.0

Source: National Statistical Office, *Annual Report on the Economically Active Population Survey*, annual.

result of this massive investment, childcare facilities have burgeoned rapidly within the past five years. In 1991, there were 3,670 facilities, accommodating 89,441 children. On the other hand, the number of childcare facilities and attending children increased by a factor of 2.7 and 3.8, respectively, in 1996 (Table 8.11). In 1995, estimates were that one in every five preschool children with working mothers was cared for in a daycare centre. In addition to the expansion of childcare facilities, this year the government announced a nationwide after-school care programme, which is currently limited to a few private schools in cities.

In the labour market, female workers face sexual discrimination such as restrictive recruitment practices, wage gaps between sexes, limited opportunities for promotion, and unstable employment. According to 1995 research on decisionmaking by women in the private sector, attainment of full gender equality is still a distant goal for a vast majority of business and industrial firms in the country, despite the Equal Employment Opportunity Act that has been in force since 1988. In most situations, inequality of one kind or another prevails and continues to

Table 8.11
Status of Childcare Facilities
(Unit: Number, Persons)

Year	Total		National and Public Facilities		Private Facilities	
	Facility	Children	Facility	Children	Facility	Children
1991	3,670	8,9441	503	37,017	1,217	36,099
1992	4,513	12,9297	720	49,529	1,808	57,797
1993	5,490	153,105	837	55,133	2,419	80,400
1994	6,975	219,308	983	70,937	3,091	119,968
1995	9,085	298,747	1,029	78,831	4,125	170,412
1996	10,125	336,639	1,048	82,170	4,745	203,332

Year	Office care		Family care	
	Facility	Children	Facility	Children
1991	19	712	1,931	15,613
1992	28	768	1,957	15,203
1993	29	560	2,205	17,012
1994	37	976	2,684	27,427
1995	87	2,388	3,844	42,116
1996	91	2,741	4,241	48,406

Source: Ministry of Political Affairs II, *White Book on Women 1996*, 1997.

pose a disadvantage for female employees from the very beginning of their entry into the job market, throughout the various stages of their careers, and until their retirement or resignation.

While significant progress has been made toward gender equality in the workplace in recent years, it has been mostly at a very basic level. More and more corporations have established non-discriminatory Open Application and Competitive Examination Systems and have replaced a gender-biased dual wage structure with a unitary one. To improve the inferior status of women in economic life, various strategies are planned and implemented. Among these strategies to be considered and applied are setting quotas for the employment of women particularly in the public sector; creating subsidies for the employment of women; health insurance coverage of the cost of maternity care; applying a statutory framework to boost equality, and expanding childcare facilities.

8.3 Women and Social Activities

Women were first granted the right to vote, to run for public office, and to be treated as equals in social and political activities under the 1948 Constitution. However, women's participation in political and social activities is extremely minimal. The proportion of women among legislators and high level officials in political parties is far below 10 percent. For example, in the 1996 National Assembly election, only 2.6 percent of candidates (41 out of 1,550) were women. Only 2 women were elected through direct elections for 253 seats, while women were appointed to 7 out of 46 positions under the proportional representation system. Women's representation is extremely minimal in the local councils. In the 1995 Basic Unit Local Assembly elections, women comprised only 1.7 percent of total candidates and 1.6 percent of those elected. Despite the fact that representation by women in the National Assembly in the early 1960s was about 0.5 to 1.0 percent, the percentage of women in pol-

itics has not improved throughout the process of economic development.

Besides the exclusion of women in the formulation of laws and policies, they have not been involved in public policy-making or in the implementation process. In the executive branch, 91 percent of women are concentrated in the lower levels (grade seven or below), 27.4 percent of all female government employees are in the lowest (ninth) grade, and 4.2 percent in higher levels (grade five and above). This concentration of women in the lower ranks of government employees is more pronounced at the local government level. Almost half of local government employees (48.9 percent) are concentrated in the lowest position, or grade nine (Table 8.12).

In order to rectify the low number of women in civil positions, the government introduced a quota system for female civil servants in 1996. The proportion of women who passed the Higher Civil Service Examinations for the fifth civil service class and foreign service class in 1994 was 6 percent and 8.6 percent, respectively, and the new measure was to increase the number to 10 percent in 1996, 13 percent in 1997, and 15 percent in 1998, with an 18 percent increase for 1999 and 20 percent for 2000. For other civil service examinations, similar annual quotas have also been set to assure that more women will be able to work in government posts at all levels. Besides civil service, the private sector has also taken measures to increase the number of female employees in keeping with government initiatives. For example, all public corporations will award additional points, ranging from 5 to 10 percent of the total, to women undergoing recruitment testing. In the past, such advantages were enjoyed only by men who were military veterans.

As a further step to promote gender equality in policy-making processes, the government established the National Committee on Women's Policies in 1983. This group focuses on providing basic plans and integrated policies for the advancement

Table 8.12
General Government Employees by Executive Grade and Sex in 1995
(Unit: Persons, %)

	Total	Female	Ratio of female
National government employee	95,950	10,820	11.3
1st grade	68	—	—
2nd grade	346	2	0.5
3rd grade	606	10	1.6
4th grade	3,490	50	1.4
5th grade	7,624	135	1.7
6th grade	20,212	972	4.8
7th grade	19,828	2,282	11.5
8th grade	20,409	3,587	17.6
9th grade	12,413	3,398	27.4
Researcher I / Instructor I	1,644	89	5.4
Researcher I / Instructor I	9,310	295	3.2
Local government employee	185,071	40,750	22.0
1st grade	6	—	—
2nd grade	22	—	—
3rd grade	133	1	0.7
4th grade	2,028	34	1.7
5th grade	11,881	367	3.1
6th grade	42,736	2,395	5.6
7th grade	54,780	9,693	17.7
8th grade	45,935	15,205	33.1
9th grade	25,944	12,704	48.9
Researcher I / Instructor I	290	15	5.2
Researcher I / Instructor I	1,316	336	25.5

Sources: Ministry of Government Administration, *Government Personnel Statistics*, 1983, 1989. *Yearbook of Ministry of Government Administration*, 1991-1996.

of women, and coordinates the policies of various administrative organisations concerning women. Also, in 1988, the Ministry of Political Affairs was authorised to take charge of women's affairs, particularly those related to women's participation in various social, economic and political activities. The ministry makes policy recommendations concerning the status of women and interacts with relevant departments for the co-ordination and implementation of various programmes.

Women's participation in interest groups is also a good indicator of the political status of women. There were 68 registered women's organisations with the government and 787 branches in 1995. Women's organisations are engaged in a wide range of activities in accordance with the objectives based on which they have been constituted. Included among them are: the education of adult women to develop their skills, public awareness campaigns aimed at raising women's conscious-

ness and improving their social standing, counselling designed to solve women's problems arising from family conflicts, revision of the family law which contains sex-discrimination provisions, consumer protection drives, and so on. In many cases, these organisations suffer from financial difficulties and organisational problems.

For the past 10 years, grass-roots women's organisations have played a crucial role in fighting against institutionalised forms of gender discrimination in labour markets. For instance, the Working Women's organisation, the Women Clerical Workers Organisation, the YWCA, and the Association of Korean Women's Organisations have made progress in organising women to eliminate mandatory retirement upon marriage and the discriminatory payment system. As a result of their efforts, the Family Law was revised in 1990, and the following laws were passed; the Equal Employment Opportunity Act in 1987, the Mother-Child Act in 1989, the Child Care Act in 1991, and the Act Relating to the Punishment of Sexual Violence and Protection of Victims in 1993.

Women's organisations promoting a consumer protection movement have adopted more active strategies, including a campaign. Their campaign is evidence of consumer interest in the goods production process, and calls on the public not to buy the products of

industries that discriminate against women. These organisations have served to advance the environmental movement to save and recycle resources, reduce waste and disposable items, provide educational programmes about the environment, and boycott the products of pollution-generating industries. They are expanding environmental protection projects by creating environmental monitoring groups through their regional organisational network.

Another area of social participation having influence on women's status is their representation in the mass media. Although most female workers in mass media are not directly engaged in formulating opinions favourable to women's status, their presence has had some indirect and direct influence on mobilising opinion on women's issues. In Table 8.13, the proportion of women in newspaper publishing companies and broadcasting stations has been increasing consistently. As of 1996, the proportion stood at 15.4 percent, and the presence of women is expected to expand constantly in the future.

8.4 Women and Law

The equal status of men and women should be predicated on the equality of both sexes before the law. The 1948 Constitution includes provisions stipulating the equality of men and women and the prohibition of sexual discrimination. In spite of these provisions, certain laws still support discrimination against women. Since the early 1980s, the efforts of Korean women to change discriminatory laws and practices have resulted in remarkable success.

The Family Law is a representative case that contains some discriminatory provisions rooted in old tradition. After concerted efforts by women's organisations to modify the law, it was almost totally revised in 1989. Although the revision did not go as far as proposed, it does provide for equal status of women in the family, especially in the area of property.

The key points of the new Family Law

are as follows. First, males continue to be heads of household, but the provisions on the succession of the head of household were deleted upon revision. Second, child custody used to be automatically granted to the father upon divorce. According to the revised law, it is now determined either by mutual agreement of the couple or by a family court. Wives and husbands have equal responsibilities of paying their children's living expenses. Third, under the revised law, women's right to inherit property was expanded, with discrimination against daughters also eliminated. In the absence of a will, the property is distributed evenly among the children regardless of sex. A childless widow is now entitled to half of her husband's inheritance, and the remaining half goes to his parents. Fourth, both wife and husband have equal rights to any property obtained after marriage, and are entitled to ask for an equal division of property. The revised law thereby entitles a woman in the process of obtaining a divorce to seek a share of the couple's property in proportion to her contribution to its accumulation. Fifth, before the revision, relatives were defined as extending to the husband's third cousin and the wife's first cousin. This patriarchal tradition was rectified in the revised law, with relatives defined to include third cousins of both the wife and husband. Although the revision of the Family Law contributed a great deal to upgrading the legal status of women, it still contains the provision regarding head of household. Follow-up measures must be taken by the government to amend the laws on this issue and others regarding taxes and the financial rights of housewives.

The next important area of discrimination is in the work place. The Labour Standards Act became law in 1953 and has since been revised nine times. This Act upholds the constitutional principle of equality by stating that employers must not discriminate against employees on the basis of sex. The Act guarantees basic equality between men and women in employment and special protection for pregnancy and

maternity in clauses such as one-year childcare leave and 60-day maternity leave. It also stipulates special provisions for the protection of women and minors against employment in any immoral or dangerous work. It prohibits night shifts and working on holidays, and limits overtime work. The Act also imposes upon employers the duty to provide childcare facilities in the workplace. As a result of the 1989 revision, application was extended to industries with more than 5 regular employees, and penalties were toughened.

However, provisions of the Act have not been very effective, and women have been customarily discriminated against in employment. As mentioned previously, female workers are facing sexual discrimination in labour markets such as restrictive recruitment practices, unequal wages, and limited opportunities for promotion. In an effort to alleviate such discrimination, the Equal Employment Opportunity Act was passed in 1987, the revised in 1989 to strengthen its powers of enforcement, and again in 1995 to facilitate the expansion of women's employment. The Act provides practical and concrete measures to protect the rights of working women. The revised provisions prohibit unnecessary physical requirements for recruitment, discrimination with regard to welfare and fringe benefits such as family allowances, housing loans, etc., while granting childcare leave for men in the instance of dual-income families. In 1991, the government issued 'Guidelines for the Prevention of Sexual Discrimination in Recruitment, Employment and Retirement' in order to eliminate sexual discrimination in employment throughout industry and help ensure strict enforcement of the Act. The Ministry of Labour selects industries by size, provides guidance, and takes action to prevent institutionalised sexual discrimination through the revision of employment rules. However, despite laws that stipulate workplace equality for men and women, blatant disadvantages for women still prevail in most areas of work.

Table 8.13
Ratio of Female Workers in Newspaper Publishers and Broadcasting Stations
(Unit: Persons, %)

Year	Total		Newspaper publishers		Broadcasting stations		Communications	
	Total	R/F	Total	R/F	Total	R/F	Total	R/F
1980	18,703	10.0	10,210	8.3	7,065	10.7	1,428	18.9
1985	18,895	10.3	10,778	9.6	8,117	11.3	-	-
1990	31,227	11.6	18,714	12.6	11,944	9.3	619	12.0
1991	33,865	12.6	20,934	13.8	12,308	10.9	623	9.1
1992	36,392	13.5	22,661	14.4	12,981	12.0	650	8.5
1993	36,494	13.6	22,870	15.1	12,981	11.3	643	8.7
1994	35,905	13.8	21,883	15.5	13,384	11.3	638	8.5
1995	40,897	14.1	22,087	16.2	18,088	11.8	722	8.0
1996	42,839	15.4	22,453	16.5	19,622	14.3	764	11.6

Note: R/F-Ratio of Females
Source: Korean Press Institute, *The Korean Press Annual*, yearly.

The Environment in Korea

9.1 Introduction

Although Korea has successfully achieved economic growth during the last three decades, it is now paying a high cost due to deteriorating environmental quality. Many studies show that serious environmental problems are not only lowering the people's quality of life but are also jeopardising future economic growth itself. The environmental challenges have varied according to the stages of Korea's economic development. Prior to the country's initial development stage starting in 1962, it had been a traditional agricultural society. Deforestation caused by the Japanese occupation (1910-1945) and the Korean war (1950-1953), however, caused serious soil erosion.

After the Korean war, the government focused on reforestation, which has proven to be successful. However, Korea's export-oriented industrialisation strategy adopted in the early 1960s, and the promotion of heavy and chemical industries in the 1970s, brought about conventional industrial pollution problems.

During the development period, concerns about economic growth overrode those regarding environmental quality; conventional pollution had not aroused social concern. Thus, as the GNP increased, the general quality of the environment deteriorated. Although Korea is now acting vigorously to solve environmental problems neglected during the era of economic development, there are still many obstacles to properly adopting and implementing environmental policies.

9.2 Current Status of the Environment

Water Quality

The quality of the country's surface waters is routinely monitored at more than 1,400 stations. The overall quality at most measuring stations is poor, with no consistent trend towards improvement.

Biochemical oxygen demand (BOD) figures vary whether measuring a river upstream and downstream, or by seasonal fluctuations. In upstream stretches, mean BOD values are generally lower, for example, the Kapchun tributary of the Keum River showed an annual mean value of 4.4 mg per litre in 1994. Of the 40 lakes that are regularly tested for water quality, not one satisfied the criterion for chemical oxygen demand (COD) in 1995. During the warm season, *E. coli* counts in excess of 1,000 per 100 ml are evidence that bacteriological conditions are unsuitable for swimming at many locations.

In the 1990s, the concentration of total nitrogen and phosphorus has increased strikingly in many rivers. Eutrophication is also a problem in many lakes. In 1994, hazardous substances were detected at 13 out of 136 sites on the four main rivers, though environmental standards were not exceeded. However, heavy metals were detected at most locations and standards were exceeded downstream in several industrial areas, such as those at Youngdungpo Machinery Industrial Complex and at Banwol. Annual mean values of cyanogen and lead exceeded standards in three rivers.

There are 780 groundwater quality monitoring stations, and 10 percent of them exceeded permissible levels for one or more of the measured pollution parameters

(nitrates, cadmium, trichloroethylene). Nitrate levels are high in urban and agricultural areas while trichloroethylene (used for cleaning metal surfaces) is found in industrial areas.

The shallow coastal waters of the Yellow Sea and the bays and semi-enclosed coastal waters of the South Sea are particularly vulnerable to pollution from land-based sources. "Red tides" of decomposing algae have occurred in many locations every summer since the early 1990s. Masan Bay on the south coast, for example, does not even meet the criteria for the lowest of three marine water quality classes in terms of COD, and more than 2 million cubic metres of contaminated bottom sediments had to be dredged out and removed between 1988 and 1995. Proposals for large-scale reclamation of tidal flats for agriculture have been cut back drastically to safeguard the fish nursery function of these estuary habitats. On the relatively straight east coast, with its deeper and more swiftly moving waters, the situation is generally more favourable, but serious local problems continue to persist.

Ambient Air Quality

Current Status and Trends

Annual average concentrations of SO₂ in Seoul, Pusan and other major cities have been declining since the late 1980s as a result of the expanded use of low-sulphur oil and liquefied natural gas (LNG). Annual values are approaching the World Health Organisation (WHO) recommendation of 40-60 µg/m³ in some cities (e.g. Seoul, Taejon), though in industrial cities such as Taegu and Ulsan they still exceed the national ambient air quality standard of 79 µg/m³. Seasonal fluctuations in SO₂ concentrations are generally less marked in industrial cities.

Concentrations of NO₂ in cities have not shown any improvement over the last ten years because traffic levels have increased. Ambient levels of NO₂ in major cities have risen slightly but remain within the national environmental quality standard (annual aver-

age of 94 µg/m³).

Annual concentrations of TSP have been roughly halved in the major cities since 1988 and are well below the national standard everywhere; in spring, however, westerly winds bring yellow sand and dust with adhering pollutants, originating in China, and daily TSP readings jump by a factor of two to four. Ambient levels of PM₁₀, measured since 1995, have exceeded the standard (annual average of 80 µg/m³) in Taegu and Anyang.

Measurement of pH for acid precipitation is carried out in 35 cities. Generally, instantaneous pH values fluctuate around the "borderline normal" value of 5.6, and annual averages in most cities are not much lower than that. However, in some industrial cities, notably Pusan and Ulsan, pH levels of around 5.2 are recorded; at some industrial complexes values can be even lower in winter (e.g. THE Kuro industrial Complex, with a pH of 3.9).

Recorded values for ozone and CO have increased in recent years. In the case of ozone, the number of episodes exceeding the one-hour standard (196 µg/m³) has increased since 1989. In Seoul, the mean annual concentration of ozone rose from 18 to 25 µg/m³ between 1990 and 1995. Concentrations of lead and cadmium in the atmosphere in major cities have declined or been roughly stable.

Waste Management

Korean law distinguishes between municipal and industrial waste. Nonhazardous industrial waste is classified as "general", while hazardous industrial waste counts as "specified" waste. In 1995, 97 percent of all waste was classified as municipal and non-hazardous industrial waste, and 3 percent as specified waste. About 33 percent of waste comes from municipals, commercial activities, restaurants, small businesses and the like, and 67 percent comes from industry (factories and commercial buildings). The total amount of municipal and industrial waste was 54 million tons in 1995.

Generation of municipal waste amounted to 389 kg per capita in 1995, or 1.1 kg per day. The amount generated declined between 1991 and 1995; the introduction of a volume-based charging system and a switch from coal to other heating fuels, especially liquefied natural gas, contributed to this reduction. The composition of municipal waste has changed considerably in recent years.

Food waste represents 31.6 percent of municipal waste (0.34 kg per person per day); it is fairly wet (up to 76 percent water content) and of low calorific value (614 kcal/kg). Reflecting on the rise in the standard of living, the combustible fraction of municipal solid waste (mainly food and paper waste) rose from 39 percent in 1987 to 75 percent in 1995. Packaging waste accounts for 32 percent of municipal waste. Collection and treatment costs for municipal waste were about 70 Won (about 7 cents) per kilogram.

The amount of industrial waste per unit of GDP is 67 kg per \$1,000. Generation of industrial waste, particularly construction/demolition waste and slag, has continued to grow as a consequence of the country's rapid industrialisation. More than half of industrial general waste consists of slag, ash and dust. In April of 1994, sewage sludge, plastic waste, rubber, waste lime and animal waste

were shifted to the general waste category.

Some 4,444 tons per day of specified waste was generated in 1995; 70 percent consisted of acids, alkalis and organic solvents. Criteria for classifying waste as "specified" include corrosiveness, flammability and toxicity. While the change of definition in 1994 caused an apparent large overall reduction in amounts of this type of waste, individual items show rising trends.

Korea's nuclear energy programme generates over 4,200 drums of low-level radioactive waste and 248 tonnes of spent uranium fuel per year. As of 1995, 50,000 drums of low-level waste and 2,623 tonnes of spent uranium fuel had accumulated.

Nature Conservation

Major biomes

About 65 percent of the nation's territory is mountainous and almost exclusively covered by forests. However, only small areas of the rich old forests, left unblemished until the end of the 19th century, exist today: almost all forest was destroyed by overharvesting, war and illegal cutting for construction materials and fuel in the first half of the 20th century. By 1960, the average stock volume was only 10.6 cubic metres per hectare. Thanks to a large reforestation effort since then, 32 percent of the total forested area was covered with planted trees as of 1995; most of the remaining forest has recovered through natural regeneration. The total stock volume in 1995 was estimated at almost 309 million cubic metres, amounting to an average of 48 cubic metres per hectare.

Korea is located in a temperate deciduous broadleaved forest zone. However, the composition of forest types shows a total of 27 percent broadleaved trees, 46 percent conifers (as a result of afforestation) and the rest, a mixture of both.

Forest lands are classified by ownership of private, national and other public forests. Private forests, owned by individuals, families and cooperative groups as well as organisations constitute 71 percent of total forest

land; about 96 percent of owners possess fewer than ten hectares each. National forests represent 21 percent of total forest area; most are managed for soil conservation, scientific research, preservation of historic relics and cultural heritage, and other public benefits. The remaining national forests are so-called disposable forests and may be converted to other uses. As of 1995, the average stock volume of national forest was 73 cubic metres per hectare. As most forests are young, timber production is still low, representing only 6.9 percent of the total value of the products of forested areas: quarrying and the gathering of nuts and mushrooms provide the bulk of the economic benefit at present.

Korea's western coast on the Yellow Sea is remarkable for its large areas of tidelands (flat lands submerged at high tide); more than 129,000 hectares have been or will be reclaimed for agricultural purposes. Because the economic returns from agricultural reclamation have been low, but also because the ecological value of these areas as nurseries for fish life has recently been acknowledged, a large proportion of proposed reclamation projects has been shelved, thus saving valuable habitat for estuary species. Korea consists of 3,200 islands, many of them scattered off the south and west coasts. Its 11,000 kilometre coastline is considerably subjected to increasing development pressures, particularly from industry, transport, tourism and agriculture.

Concerning inland aquatic ecosystems, the country has almost 4,000 rivers and streams and 19,000 lakes and reservoirs. Major inland wetlands have been found in riparian systems and it appears that there were about 100 swamps, most of which have been landfilled for agriculture and other uses. Natural inland wetlands are rare in Korea; Woopo swamp and the high moors (about 1,200 metres above sea level) of Mount Taeam are examples. A recent nationwide survey showed that the Seosan reclamation site on the west coast, which is used for rice paddies, is the main gathering site for migratory birds in Korea.

Biodiversity

Except for vertebrate animals and flowering plants, the botanical and zoological status of Korean wildlife has not been well documented, with inconsistent figures regarding the number of species in each biological kingdom, division or class.

The highest estimates show 50,000 to 60,000 species. Official estimates are that Korea supports around 28,500 species of fauna and flora, including 1,300 vertebrates, 2,400 invertebrates, 13,000 insects and spiders and 4,600 higher plants. Among the vertebrates are 95 mammal species, 394 birds, 14 amphibians, 24 reptiles and 902 fish, of which 130 are freshwater species. Only 45 species are endemic: four amphibians, one gymnosperm and 40 angiosperms. The varied climatic and topographic conditions make Korea a diversified floral region. Otherwise habitat diversity is more limited because of the dominance of forests in the landscape. Little information on genetic diversity has been reported.

Flora and fauna

Magpies are abundant in the lowlands near and in human settlements, while the Korean wood owl makes its home away from humans. The black-naped oriole (*Oriolus chinensis diffusus*) and the grey heron (*Ardea cinerea jouyi* Clark) are found around rural villages. The crested sheldrake (*Tadorna cristata*), though still on the IUCN Red List, is believed to have become extinct. Among the mammals are the roe deer (*Capreolus capreolus ochracea*), the Eurasian badger (*Meles meles melanogenys*) and the racoon dog (*Nyctereutes procyonoides*). The red fox is believed to be extinct and the five to ten Himalayan black bears ("bandal-gom" or half-moon bear) still to be found in the Chiri Mountains are under threat from poachers, but are subject to proactive protection efforts. The last recorded capture of a Siberian tiger, once scattered widely throughout the country, dates back to 1924; the species has probably disappeared. Notable among the flowering plants are Korean stew-

Table 9.1
Waste Generation, 1990-1995
(Unit: Tons/Day)

	1990	1991	1992	1993	1994	1995
General domestic waste of which;	83,962	92,246	75,096 ¹⁾	62,940	58,118	47,774
Food	23,003	26,311	21,807	19,764	18,055	15,075
Paper	11,870	13,656	13,125	11,546	12,468	11,203
Coal briquette	28,061	26,254	17,750	9,780	5,534	3,235
Ash						
Industrial waste of which;	61,412	66,430	69,439	78,443	88,931	100,267
General waste	58,759	47,709a	48,058	55,969	85,229	95,823
Specified waste	2,653	18,721a	21,381	22,474	3,702	4,444
Total	145,374	158,676	144,535	141,383	147,049	148,041

Note: 1) Definition of each category was changed from this year.
Source: Ministry of Environment, *Environmental Statistics Yearbook*.

Table 9.2
State of Flora and Fauna, Early 1990s

	Total number of species known	Threatened species				Total
		Rare	Decreasing	Endangered	Extinct	
Total	28,500	109	20	45	5	179
Vertebrates of which:	1,300					
Mammals	95	8	4	8	1	21
Birds	394	29	29	25	..	54
Freshwater fish	130	18	18	3	1	29
Reptiles	24	..	..	..	..	..
Amphibians	14	6	5	1	..	12
Invertebrates	2,400	..	..	..	..	..
Insects and spiders	13,000	23	..	1	..	24
Higher plants (incl. ferns)	4,700	25	4	7	3	39
Fungi	1,600	..	..	..	..	..
Lower plants	3,600	..	..	..	..	..
Protozoa	700	..	..	..	..	..
Micro-organisms	1,200	..	..	..	..	..

Sources: Ministry of Environment; Korean Association for the Conservation of Nature, 1989; Forestry Administration, 1996.

artia, various species of rhododendron and Korean forsythia.

Several partial assessments exist in respect to threatened species. The Korean Association for the Conservation of Nature lists 179 threatened species of fauna (including insects, but no other invertebrates) and flora. In the context of its management responsibilities under wildlife legislation, the Ministry of Environment (MoE) has listed 203 species (not including mammals and birds) as "special management species." Similarly, the Forestry Administration has designated 70 families of mammals and 96 families of birds as threatened. When Korea acceded to CITES in 1993, MoE and the Forestry Administration drew up a list of species covered.

9.3 Policy and Administration

Overview

The rapid industrialisation and urbanisation of Korea over the past 30 years has resulted from growth-oriented economic policies adopted in the 1960s. The first environmental legislation in Korea was the Public Nuisance Act enacted in 1963. There

was, however, little concern for environmental quality, and these acts were not properly enforced because maximising economic growth had been given top governmental priority. The Public Nuisance Act was hardly an action-forcing statute and was not actually implemented until 1969 when the associated regulations were adopted. As a result of rapid heavy industrialisation and urbanisation since the early 1960s, environmental quality began to deteriorate rapidly as of the mid-1970s. The government was pressured to take measures to handle the emerging environmental problems.

Governmental response to such pressures was the replacement of the Public Nuisance Act by the Environmental Conservation Act in 1977. We can say that environmental policy and regulation in Korea began with the enactment of the Environmental Conservation Act. The Environmental Conservation Act extended the legal dimensions of environmental policy to cover most environmental issues. It introduced many important features of environmental management such as the promulgation of ambient standards, establishment of environmental monitoring networks, emission standards for air and water pollution sources, and administrative and criminal sanctions for violation of environmental regulations.

Moreover, the 1980 amendment of the Korean Constitution introduced the environmental right as a basic human right. Article 35 of the Constitution declares:

- Every citizen shall have the right to lead a life in amenity, and the government and citizens are required to preserve the environment.
- The contents and exercise of environmental right shall be stipulated by law.

The Environmental Administration, a vice-ministerial agency, was established in 1980. The Environmental Impact Assessment system was adopted in the 1981 Amendment of the Environmental Conservation Act. The Emission Charge System for noncompliance was introduced in 1983. Despite developments in environ-

mental laws, their low priority and weak administrative capacity prevented them from being properly implemented.

As economic development brought significant growth in individual income levels, the demand for a cleaner environment grew. The government of Korea gradually introduced more stringent environmental regulations and higher levels of investment in pollution abatement facilities. To improve the capability of environmental policy enforcement, six regional branch offices of environment were introduced in 1986. At the beginning of 1990, the Environmental Administration was upgraded to become the Ministry of Environment (MoE). Its executive functions were further strengthened in a structural government overhaul in 1995.

The Environmental Conservation Act was replaced by the Basic Environmental Policy Act and four new acts were introduced in 1990: the Air Quality Preservation Act, the Water Quality Preservation Act, the Noise and Vibration Control Act, and the Toxic Chemical Control Act. The Basic Environmental Policy Act (BEPA) sets forth the core principles of environmental policy. Several individual sectoral laws, which are more detailed and which specify and strengthen regulations, have been enacted since 1990. Currently, twenty-four acts, other than the BEPA, regulate environmentally-unfriendly activities in their specified areas.

In 1995, Korea developed its "Green Vision 21" which recognises the considerable efforts needed to rehabilitate Korea's environment and provides an ambitious schedule for reinforced environmental protection. Green Vision 21 was backed up by the "Presidential Vision for Environmental Welfare" proclaimed in March 1996 and the "Mid-term Comprehensive Environmental Conservation Plan" adopted in 1997.

Environmental Administrative System

The Central Government

The Ministry of Environment (MoE)

Table 9.3
Current Structure of Environment Laws

Environmental Acts	Date Legislated
1. Water Supply Act	1961(1993)
2. Sewer System Act	1966(1994)
3. Environmental Management Corporation Act	1983(1993)
4. Basic Environmental Policy Act	1990
5. Toxic Chemicals Control Act	1990(1991)
6. Environmental Dispute Settlement Act	1990
7. Air Quality Preservation Act	1990
8. Water Quality Preservation Act	1990(1993)
9. Noise and Vibration Control Act	1990(1993)
10. Act Relating to Punishment for Environmental Crimes	1991
11. Act Relating to Environmental Improvement Charges	1991
12. Act Relating to the Treatment of Sewage, Night-Soil, and Livestock Wastewater	1991(1993)
13. Natural Environment Preservation Act	1991(1994)
14. Marine Pollution and Preservation Act	1991(1993)
15. Waste Management Act	1991(1993)
16. Act Relating to the Promotion of Resource Saving and Reutilization	1992
17. Act Relating to the Transboundary Movement of Wastes and their Disposal	1992
18. Environmental Impact Assessment Act	1993(1997)
19. Korea Resources Recovery and Reutilization Corporation Act	1993
20. Ground Water Act	1994
21. Special Account for Environmental Improvement Act	1994
22. Act Relating to Support and Development of Environmental Technologies	1994
23. Drinking Water Management Act	1995
24. Soil Preservation Act	1995
25. Act Relating to the Promotion of Construction of Waste Treatment Facilities and Support of Inhabitants Near the Facilities	1995

Note: Years in parentheses denote the dates of most recent amendment.

The Korean political system is based on the presidential system. Environmental acts passed by the National Assembly are implemented under presidential power. Actually, most environmental policies have been proposed by the administration, and the President assumes major responsibilities in drafting and implementing environmental policies. Although the Ministry of Environment plays a major role in environmental protection in the Korean governmental system, several Ministries and Administrations are also involved in creating and implementing environmental policies. The functions of regional environmental management are shared between the Environmental Management Offices and the Provincial/Local governments.

The first environmental administrative system appeared in 1967, when the Ministry of Health and Social Affairs introduced the Pollution Prevention Section. Major development in environmental policy and admin-

istration were made after the declaration of Environmental Rights in the new Constitution and the establishment of the Environmental Administration in 1980. The legal status of the Environmental Administration was as a subcabinet agency under the Ministry of Public Health and Social Affairs. The Environmental Administration was upgraded to the status of Ministry of Environment (MoE) in 1990, a cabinet-level ministry with the primary responsibilities of developing legislation, policies, and measures for environmental management.

The MoE is the centre of the environmental management system in Korea with responsibilities of maintaining air quality, water quality, waste management, and nature conservation policy. Responsibility for the

drinking water supply was moved from the Ministry of Construction to the Ministry of Environment in 1995. The headquarters is comprised of the Planning and Management Office, the Environmental Policy Office, and five bureaus. Also, the MoE affiliates include the Central Environmental Disputes Co-ordination Commission, National Environment Research Institute, the National Environmental Officials Training Institute, and the Korea Environment Institute (KEI). Set up in September of 1997, this agency grew out of the Korea Environment Technology Research Institute (KETRI) established in 1993. KEI's tasks are not only to develop and evaluate environmental policies but also to review environmental impact statements for the Ministry of Environment. Two public corporations, the Environment Management Corporation (EMC), and the Korea Resources Recycling Corporation (KRRC) are also part of MoE, though they are public enterprises.

The Basic Environmental Policy Act stipulates that major environmental policy decisions must be confirmed by the Environmental Conservation Committee. The Prime Minister chairs the committee and its membership includes the Minister of Environment, all other ministers who are in charge of environmental and/or environment-related policies, and representatives from outside the government.

Although the Ministry of Environment has a major role in environmental protection in the Korean governmental system, several Ministries and Administrations are also involved in the drafting and implementation of environmental policies. The functions of regional environmental management are shared between the Environmental Management Offices and the Provincial/Local governments. The system of implementing environmental policy and services is shown in Figure 9.1.

Other Ministries with Environmental Responsibilities
With the onset of environmental admin-

istration, the Korean government defined environmental policy and administration as very narrow concepts. The functions of the Environmental Administration were limited to the prevention of pollution, leaving many of the governmental functions related with environmental affairs to other governmental agencies.

In carrying out its functions, MoE must coordinate with other ministries and administrative bodies that have substantial responsibilities in environmental management. The distribution of these functions is inherited from earlier institutional structures. The ministries and administrations which are responsible for environmental and/or environment-related policies are as follows:

- The Ministry of Construction and Transportation is responsible for designating development-restricted areas, environmental aspects of public works, management of rivers and lakes, especially water quantity management, and energy use in buildings.
- The Ministry of Agriculture and Forestry, which includes the Forestry Administration, is in charge of protecting wild birds and mammals, hunting regulations and forestry.
- The Ministry of Maritime and Fisheries which includes the Ports Administration and the National Maritime Police Administration is responsible for supervising and enforcing marine regulations and for preventing marine pollution.
- The Ministry of Science and Technology controls the transport, handling, and disposal of radioactive industrial wastes.
- The Ministry of Home Affairs is responsible for the designation and management of national parks. It is also in charge of natural hazard management.
- The Ministry of Culture and Sports is responsible for the designation, protection, and management of rare flora and fauna and natural monuments.
- The Ministry of Trade, Industry, and Energy is in charge of the management

of industrial facilities, supply of low-sulphur oil, control of transboundary movement of wastes, research and development of new energy resources and clean technology, and the development of environmentally-sound industrial structures.

- The other ministries involved in environmental policymaking are the Ministry of Finance and Economy (economic instruments), Ministry of Foreign Affairs (international environmental affairs), Ministry of Health and Welfare (indoor air pollution), and the Ministry of Labour (occupational health and safety).

The Environmental Conservation Committee

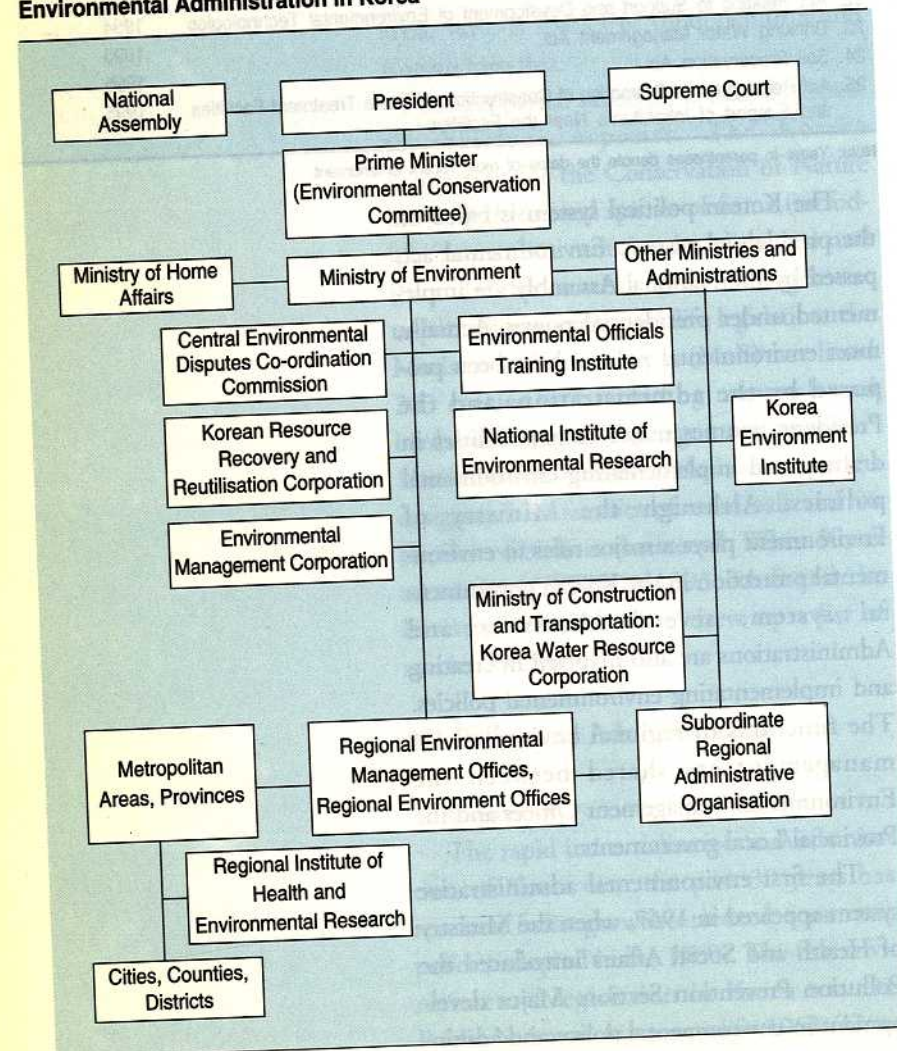
The Basic Environmental Policy Act stipulates that major environmental policy decisions must be confirmed by the Environmental Conservation Committee. The Prime Minister chairs the committee and its membership includes the Minister of Environment, all other ministers who are in charge of environmental and/or environment-related policies, and representatives from outside the government. The responsibilities of the committee includes the following functions;

- To develop and coordinate mid- and long-term comprehensive environmental conservation plans.
- To determine annual priorities of environmental conservation projects and allocate the environmental conservation budget.
- To support the environmental conservation movement of people and review other issues which are considered environmentally important.

The Age of Governing at the Local and Regional Level

Traditionally Korea has been ruled by a strong central government. When the Environmental Conservation Act was enacted

Figure 9.1
Environmental Administration in Korea



ed in 1977, however, the responsibility of implementing environmental policies was given to provincial/local governments. As public awareness of environmental issues increased, six Regional Branch Offices of the Environment were established in 1986, based on a strong disbelief in the ability and willingness of provincial/local governments to foster environmental protection. Since then, these Offices have been the key organisations handling the affairs of regional environmental management. The Regional Branch Offices were upgraded to Regional Environmental Offices in 1990 along with the upgrading of the Ministry of Environment.

After the phenol pollution accident in 1991, along with the mood towards localisation, all responsibilities for monitoring and enforcing environmental regulations devolved to provincial governments in 1992. Nevertheless, after the water pollution accidents in the Nakdong and Youngsan Rivers in early 1994, the responsibility for implementing environmental policies began to be shared by both the Environmental Management Offices and provincial governments based on the location of emission sources. Emission sources located in industrial complexes require permits and are enforced by the Environmental Management Offices; others are enforced by provincial governments. Most implementation tasks which have been transferred to provincial governments have been further transferred to local governments.

Local governments (i.e. provinces, counties and municipalities) are in charge of implementing central government environmental policies and acts delegated by the Ministry of Environment. Provincial and local governments have various types of environmental administrative structures. However, since these governments lack experience in environmental policy implementation and since their discretion for organisational reform is very limited under the current Local Autonomy Act, their administrative structure and manpower have many

weak points.

Each province and six metropolitan areas operate their own Institutes of Health and Environmental Research which perform surveys and monitor pollution levels within their own territories. Most environmental functions which have been transferred from the MoE to provincial governments have been further transferred to local governments (cities, counties, districts).

Partnership with the Private Sector

Public participation and public-private cooperation in the environmental sector are necessary to implement environmental policy effectively.

In the 1990s, the Korean government acknowledged the contribution a well-informed citizenry can make in protecting the environment. The MoE invites community representatives and NGOs to participate in the policy formulation process. The 1993 Environmental Impact Assessment Act stipulates that a public hearing must be held to obtain the opinions of local residents. A regional environmental commission is held once or twice a year in order to hear from specialists in their areas of expertise.

MoE has taken a number of initiatives to direct consumer attention towards products that are less polluting or more energy efficient and to encourage manufacturers to adopt environmentally friendly production and/or distribution processes. In 1992, a voluntary eco-labelling programme was initiated. A government-industry-consumer committee, the Korean Environmental Labelling Association, selects products to carry the eco-label. As of July 1995, a total of 170 products from 94 companies had been awarded this label.

To lead environmentally friendly industrial activities, the Korean Government handed down the Act for Promoting an Environmentally Friendly Production System in 1994. The Act provides for the designation of environmentally friendly management systems and production processes and the establishment of a clean

technology development support centre. In 1995, the Environmentally Friendly Plant Certification System was introduced to promote environmentally friendly management. Plants listed under this system receive special benefits, such as exemption from the requirement to obtain a permit from the environmental authorities prior to adding or modifying an installation, exemption from inspection and provision for low-interest loans.

Environmental NGOs, which have engaged in anti-government movements, now realise that other alternatives can be more effective in preserving the environment. Hence, the relationship between environmental NGOs and the government has changed in several ways. The number of environmental NGOs has increased dramatically. Moreover, environmental NGOs have expanded their areas of interest. The focal area for the environmental movement, which used to be local environmental accidents that arose from illegal dumping and emission of pollutants, has expanded to include highlighting changes in 'ways of thinking' and 'patterns of daily life' such as living environment, consumption and production patterns.

Environmental Expenditures

The central government budget allocation for environmental purposes has grown steadily since 1985, both in real terms and as a share of the budget. Although government spending on the environment has increased more rapidly than public spending in other areas since the mid-1980s, it has been unable to meet the increasing demand for environmental quality. The Government of Korea introduced the Special Account for Environmental Improvement in 1995 to make the allocation of environmental resources more efficient. The Special Account, administered by the MoE, receives revenue from 18 sources under 14 laws, including various environment-related economic instruments, loans and transfers from the General Account.

The MoE has been responsible for less

Table 9.4
Central Government Expenditures for Environmental Protection
(Unit: Billion Won)

	1991	1992	1993	1994	1995	1996	1997
Total Environment Expenditures (A)	457.0	581.9	691.9	1,123.2	1,739.4	2,197.9	2,535.9
Total							
Governmental Expenditures (B)	39,366.9	43,842.1	51,187.9	64,457.5	74,534.4	85,308.3	98,593.3
(A/B, %)	1.16	1.33	1.35	1.74	2.33	2.58	2.57
GNP (C)	214,239.9	238,704.6	265,517.9	302,867.0	339,529.0	373,481.9	436,870.0
(A/C, %)	0.21	0.24	0.26	0.37	0.51	0.59	0.58
MoE	271.8	139.6	188.7	471.6	672.9	896.7	1,080.2
MOCT ¹⁾	175.2	214.8	238.2	191.6	301.6	375.3	407.0
MOHA ²⁾	0	212.5	250.0	369.0	472.1	557.8	846.7
MOAF ³⁾	0	0	0	0	40.0	40.0	40.0
MOFE ⁴⁾	10.0	15.0	15.0	91.0	252.8	328.1	162.0

Notes: 1) MOCT : Ministry of Construction and Transportation
2) MOHA : Ministry of Home Affairs
3) MOAF : Ministry of Agriculture and Forestry
4) MOFE : Ministry of Finance and Economy
Source: Ministry of Environment, 1997

than half of governmental environmental expenditures. More than 70 per cent of environmental expenditures is allocated to water quality preservation and one fourth is allocated to waste management. The cost of air pollution management is mainly financed by the industrial sector. Total public and private pollution abatement and control expenditures (for both investment and maintenance) for 1992-1995 were estimated by the Bank of Korea in a 1996 report. According to the bank's figures, the total had reached 5,920 billion Won by 1995, and is continuing to increase substantially over time.

Use of Economic Instruments

Prior to the 1990s, the major policy tools of environmental protection in Korea were of the command and control types. Thus

Table 9.5
Estimated Pollution Abatement and Control Expenditure
(Unit: Billion Won)

	1992	1993	1994	1995
Total Government	2,162	2,341	2,511	2,915
Central ¹⁾	125	152	161	196
Local	2,037	2,188	2,349	2,719
Industry	1,997	1,978	2,272	2,591
Household	303	360	381	414
Total	4,462	4,679	5,164	5,920

Note: 1) Grants from the central government are classified as local government expenditures
Source: Bank of Korea

stringent environmental regulations have placed greater cost burdens on both industry and government. The government has considered environmental pricing (economic incentives) as a supplement to traditional control methods. The MoE has put the following economic instruments into effect to implement the Polluter-Pays Principle.

The Emission Charge System, a means of penalising noncompliance, went into effect in 1983. Under the system, if permit holders are detected violating the conditions of their permits, the system imposes charges on the emissions or discharges of certain pollutants that exceed set limits. Ten air pollutants and fifteen water pollutants, including BOD, COD and suspended solids, are subject to the charge. Recently, the government has introduced the Basic Emission Charge, which is levied according to the volume of effluents emitted. The new system rewards enterprises whose emission levels fall below those allowed in their permits, in order to encourage enterprises to further reduce emissions.

The Deposit-Refund System for Waste Disposal went into effect in 1992. To promote recycling, the MoE has the authority to collect deposits from producers and importers of easily retrievable and recyclable products. When pollution is avoided or reduced by returning the products or their residuals, a refund is given. The Waste Treatment Charge System was introduced in 1993 to promote waste reduction and

Table 9.6
Economic Instruments used for Environmental Protection

	Year of Introduction	Payable on	Revenue (bn. W)			
			1983-93	1994	1995	1996
Emission Charge	1983	Air/ water emission	584	162	186	208
Environmental Improvement Charge	1993	Public buildings/ Diesel motor vehicles	400	761	1,124	1,592
Bottled Water Charge	1995	Bottled water	-	-	62	262
Waste Disposal Charge	1994	Containers, etc.	-	129	167	364
Deposit-Refund	1992	Recyclables	565	297	324	337
Total			1,549	1,349	1,863	2,763

resource conservation. This system levies a charge on producers or importers of materials and containers that contain harmful substances or that are difficult to collect or recycle.

In order to curb increasing pollution from commercial and consumption sectors, the Environmental Improvement Charge is levied on owners of commercial buildings and on diesel-powered vehicles. The major objectives of the charge are to foster pollution reduction and to secure funds for environmental investment. The rate charged for commercial buildings is based on the amount of fuel and water used; for diesel-powered vehicles it is based on the age of the vehicle and the estimated volume of exhaust.

The Volume-Based Collection Fee System for Domestic Wastes went into effect in 1995. Its objectives include reducing the volume of domestic waste generated by households and promoting recycling by imposing collection fees according to the volume of waste generated.

Revenues from economic incentive systems, such as the Emissions Charges and Environmental Quality Improvement Charges, constituted about 30 per cent of the MoE budget in 1996.

9.4 Evaluation, Challenges and Prospects

Evaluation and Challenges

After a long period of rapid economic growth, by the first half of the 1990s, Korea had created various environmental institutions, passed laws, and taken other steps to relieve some of the pressures on the environment. Notwithstanding average economic growth rates of 8 percent per year, some progress is being made, but as yet there has been no wide-sweeping improvement in actual environmental quality. Moreover, certain indicators suggest that pressures in some areas are growing faster than the GDP.

Environmental conservation has become one of the major social concerns in Korea. The complexity of environmental issues is a

result of various factors: serious industrial pollution in major industrial complexes, high ozone concentrations, the problem of collecting and treating solid waste, sewage treatment in metropolitan areas, high development demand in ecologically-valuable areas, and so on. Moreover, the introduction of a local autonomy system during the early 1990s shows mixed results. Some local governments pay more attention to environmental protection than before; others place more emphasis on regional economic development, even sacrificing environmental quality. Serious environmental disputes between local governments and the "NIMBY" philosophy become another issue. The globalisation of environmental problems is another major challenge in Korea. Deterioration of the global ecosystem due to climate changes, ozone depletion, desertification, and deforestation requires close international cooperation. Moreover, transboundary pollution problems such as acid rain necessitate close regional cooperation with neighbouring countries.

To cope with these problems and comply with the peoples' desire for a clean environment, Korea needs a new administrative system and effective environmental policies which can mobilise the resources and energy of every social sector.

Prospects: Green Vision 21

To be prepared for the 21st century, designated the Century of the Environment, Green Vision 21 was created in 1995 for the purpose of providing advanced environmental administrative services while seeking a national consensus for environmental protection.

Water Quality

The 1995 Green Vision 21 presents a comprehensive set of water management goals as well as quantitative targets. At the most general level, its aims are to provide safe water in sufficient quantities and to make rivers, even small ones near cities, suitable for fish; for the latter aim this means achieving

Class I (i.e. natural environment preservation area with a BOD of less than 1 mg per litre) or Class II (i.e. swimming water with a BOD of less than 3 mg per litre) quality in the middle and upper reaches of all rivers and Class III in the downstream reaches. Beyond this general aim, 11 sets of more specific objectives are defined, ranging from quality objectives for water supply sources, to sewage treatment connection rates, to the improved coordination of national water management policy.

Table 9.7
Selected Water Management Objectives

Water quality of supply sources will be improved and maintained at class I to II.				
	1995	1997	2001	2005
Target ratio for improving water quality of rivers nationwide to class I or II	30%	42%	70%	95%
The Government will strengthen standards for effluent discharged into rivers and will expand the number of hazardous substances subject to control for the protection of public health.				
	1995	2001	2005	
BOD (mg./l)	30	10	below 10	
Total N (mg./l)	no standards	30	below 30	
Total P (mg./l)	no standards	4	below 4	
Number of substances subject to control (items)	20	30	50	
Basic environmental facilities such as sewage treatment plants will be built to raise the treatment ratio to the level of advanced countries.				
	1994	1997	2001	2005
Sewage treatment ratio	42%	55%	65%	80%
Piped water supply ratio	81%	86%	95%	
Regulatory methods will be gradually changed; whereas current regulations apply only to the concentration of effluent, future rules will apply to both the concentration and amount of effluent.				
Efficient use of water resources will be promoted through water demand management				

Source: Green Vision 21.

Air Quality

The general aim of Korean air management policies has been to achieve ambient air quality that is adequate to protect human health and the environment.

The 1995 Green Vision 21 document calls for a "substantial reduction of smog in large cities and industrial complexes" as its overall goal for air and stipulates a timetable for the gradual strengthening of standards for ambient air quality and diesel exhaust emissions, as well as of fuel specifications.

Energy conservation and efficiency policies are reviewed and updated as part of the

five-year economic plan. The 1993-1997 Plan for a New Economy aimed at encouraging a "long-term energy supply and demand development consistent with the sustainable use of energy, protection of the environment and continued growth of the economy." The government has adopted a target of increasing the share of renewable forms of energy to 3 percent of the total primary energy supply by 2001.

Table 9.8
Selected Air Management Objectives

Seoul	1994	1997	2001	2005
SO ₂ (annual mean in $\mu\text{g}/\text{m}^3$)	60	46	29	23
TSP (annual mean in $\mu\text{g}/\text{m}^3$)	88	80	70	60

- The air in major cities will become fresher with widespread use of cleaner burning fuels.
- The supply of clean fuels such as LNG for heating and other needs will be expanded, with priority placed on large cities such as Pusan and Kwangju. The supply of residual fuel oil will be reduced by replacing it with LNG and diesel fuel.

	1995	1997	2001	2005
LNG Supply	6,334	9,666	11,596	14,866
Residual fuel oil vs. diesel fuel	1 : 0.34	1 : 0.5	1 : 1.2	1 : 2

- Use of clean fuel will be required for large pollution-generating facilities, such as power plants built in areas that might have pollution problems. Installation of flue gas desulphurisation will be required in areas that are expected to have a less serious pollution problem.
- Use of district heating systems in industrial complexes and urban areas, and collective energy supply systems based on waste heat generated from

	NOx	TSP
City buses (1998)	11 9g/kWh	0.9 0.5g/kWh
Diesel heavy vehicles (2002)	11 6g/kWh	0.9 0.15g/kWh

Source: Green Vision 21.

incinerators, will be expanded.

- To create a pleasant atmosphere in all subterranean spaces, standards for underground air will be set and air quality management tightened. Methods for measuring and assessing air quality in subway stations, underground shopping centres and other underground spaces (possibly including underground cities in the future) will be developed.
- Production and use of lower-emission diesel-powered vehicles will be encouraged. Emission standards for city buses and diesel-powered heavy vehicles will be strengthened.

Efforts to protect air quality through standard settings began in the 1970s. The 1990 Air Quality Preservation Act is the basis of current air pollution control policies. The Act and regulations set ambient air standards for SO₂, NO₂, TSP, PM10, CO, ozone and lead that were applied to the entire country. A new set of stringent national standards came into effect in January 1995. Municipalities may set their own, non-legally binding standards, but so far these standards have been enforced only in Seoul.

The Seoul metropolitan government has formulated medium- and long-term plans while committing itself to adopting the lowest WHO recommended values as its ambient air quality standards by 2000; in the case of SO₂, ozone and TSP, these standards are more stringent than the national ones.

Waste management

The general aims of waste management are to minimise waste generation, recover resources from waste and minimise pollution from waste treatment, thereby preserving the natural and the human environment.

The National Comprehensive Waste Management Plan, prepared in 1993 and revised in 1996 to cover the period 1996 to 2001, addresses all stages of the waste hierarchy, aims at full implementation of the pol-

luter-pays principle by 2001 and proposes to foster the recycling industry through taxation and government procurement policies. It also proposes to upgrade the country's waste treatment facilities. The plan stipulates that waste remaining after recyclable materials are salvaged must be cleanly and safely disposed of. Its objectives are to recycle 35 percent of municipal waste by 2001, to incinerate 20 percent and to reduce landfill from 89 percent in 1992 to 45 percent in 2001. At the same time, waste generation should remain below 400 kg per capita.

The main aims of the Master Plan for Resource Recycling and Reutilisation (1994-1998) are to raise the efficiency of the collection and transport of recyclable materials, restructure the production and distribution systems to facilitate recycling and promote demand for recycled goods. The plan also sets goals for reuse of waste paper, cardboard, glass, steel and aluminium cans, plastics and lubricants.

The 1995 Green Vision 21 document proposes the establishment of a social structure that encourages recycling and reuse of materials to minimise waste. In addition, it enumerates short- and medium-term goals concerning reduction of municipal waste generation and preferred methods of treatment. Green Vision 21 further signals the intention of establishing industry-specific waste reduction goals, minimising the volume of food waste, changing production and distribution systems, promoting reduction of waste volume on the basis of life cycle analysis and increasing the demand for recycled materials.

Nature Conservation

The Master Plan for the Preservation of the Natural Environment (1994~2003) aims to strike a balance between preservation and development and to maintain the diversity and balance of natural ecosystems. Its long-term objectives include the restoration of damaged natural ecosystems. Short-term objectives are directed at achieving an efficient preservation policy, extending green

Table 9.9
Ambient Air Quality Standard

Pollutants	Standards (mg/m ³)	Measurement method	
SO ₂	- Annual average	79	pulse U.V. fluorescence method
	- 24-hour average	367	
	- 1-hour average	655	
CO	- 8-hour average	10	non-dispersive infrared method
	- 1-hour average	29	
NO ₂	- Annual average	94	chemiluminescent method
	- 24-hour average	150	
	- 1-hour average	282	
TSP	- Annual average	150	β -ray absorption method, high volume air sampler method
	- 24-hour average	300	
PM ₁₀	- Annual average	80	β -ray absorption method
	- 1-hour average	150	
Ozone	- 8-hour average	188	U.V. photometric method
	- 1-hour average	196	
Lead	- 3-month average	1.5	atomic absorption spectrophotometry

Note: In effect since January 1995.

Source: Ministry of Environment, *Environmental Statistics Yearbook*.

Table 9.10
Waste Management Targets

	In Green Vision 21	1994	1997	2001	2005
Municipal waste generation per capita	Kg/day	1.5	1.3	1.2	1.0
Share of: incineration/landfill/recycling	%	2/86/12	20/65/15	30/50/20	50/25/25
Upgrading standards at sanitary landfills	% of total	62	78	92	100
Treatment facilities for general waste	Number	15	45	97	136
Treatment facilities for specified waste	Number	3	7	10	15
In National Comprehensive Waste Management Plan (1996~2001)		1995	1998	2001	
Municipal waste share of: incineration/landfill/recycling		4/72/24	15/55/30	20/45/35	
Industrial waste Share of: Incineration/landfill/recycling		6/33/61	10/25/65	12/20/68	

Sources: Green Vision 21 (1995); National Comprehensive Waste Management Plan (1996).

Table 9.11
Waste Reuse Targets
(Unit: % of Content)

	1994~1995	1996~1997	After 1998
Consumer products			
Waste paper	47	50	55
Waste glass	42	47	52
Scrap iron (cans)	20	30	40
Waste plastics	5	10	20
Steel slag			
Blast furnace	100	100	100
Steelmaking	50	80	90
Bituminous coal	15	25	35
Construction materials			
Sand and silt	30	45	60
Waste concrete	25	35	50
Waste asphalt	10	25	35

Source: Ministry of Environment.

Table 9.12
Selected Nature Conservation Objectives

Isolated and damaged natural ecosystems will be restored.
Passageways for wildlife, such as tunnels and bridges, will be built to link ecosystems that have been separated and isolated by construction of roads and dams.

	1997	2001	2005
Number of passageways for wildlife (including restoration of habitats)	6	50	100

Natural ecosystem conservation areas, especially virgin forests and alpine meadow, will be expanded and protected. High moors that support diverse ecosystems serving as habitats for migratory birds will be given priority. Wetlands will be further protected.

	1995	1997	2001	2005
Percentage of total land area / Number of sites	1 10	1.5 15	3 30	5 50

Marine environment reservation measures will be formulated for coastal areas, taking characteristics of each zone into consideration.

An integrated coastal management system will be introduced, to curb and discourage rapid and haphazard coastal development and to ensure sustainable use and preservation of marine resources; medium- and long-term plans to be used as basic guidelines for integrated management will be formulated, and the Coastal Management Act will be introduced.

Source: Green Vision 21.

areas and strengthening wildlife protection.

The 1995 Green Vision 21 laid down more concrete goals in terms of extending protected areas (e.g. forests, meadows, wetlands), establishing ecological corridors, preserving wildlife and boosting the protection of marine and coastal areas (Table 9.12). In addition, MoE adopted similar objectives as a follow-up of the 1996 "Presidential Vision for Environmental Welfare."

Chronology of Selected Environmental Events (1992-1996)

1992

January

- After the closure of the Nanji Landfill, the Kimpo Landfill begins to serve as the major landfill site in the Seoul Metropolitan Area. Subsequently, the opening of the site causes conflicts between neighbouring citizens and the government.
- Implementation of the Deposit-Refund System begins nationwide.

May

- The Environmental Declaration for Businesses operation is adopted.
- Five major business associations unite to assume responsibility for environmental protection.

June

- Massive death of fish in the Han river occurs, thereby accelerating the initiation of river basin water-quality management.
- Implementation of the Eco-Labeling System begins for environmentally friendly products; the government and general public are encouraged to purchase eco-labelled products.
- The National Environmental Declaration serves to commemorate World Environment Day and to raise the general public's environmental awareness.

July

- Environment-related enforcement authority is delegated to local autonomous governments.
- The Environmental Charge System regulation is adopted, which incorporates the Polluter-Pays Principle.

November

- Construction of Youngjong Island Airport gets underway. The project results in many controversial environmental issues, such as the hold placed on designating the Marine Ecosystem Preservation Area.

1993

January

- NGOs start campaigning to boycott products made by companies that frequently violate environmental standards.

March

- Wonjin Rayon, the only manufacturer of artificial silk, is ordered to shut down after being accused of causing 265 occupation-related diseases.

June

October

November

- The city of Seoul pushes forward the construction of incinerators for the purpose of waste management. Local citizens and NGOs strongly oppose the action.
- Greenpeace reports an incidence of nuclear waste dumped into the East Sea by Russia.
- The Ministry of Environment announces its Long-Term Comprehensive Plan for Waste Management, which concentrates on preventive measures and waste reduction at the source.

1994

January

- News media such as Chosun and Dongah newspapers strongly support public education and relations to foster environmental protection by such steps as implementing "small creek management action" and formation of the "Green Scouts".
- The Nakdong River drinking water disaster occurs when drinking water is contaminated by an ammonia and nitrogen compound, which makes it necessary to halt water supply to the area temporarily.

March

- The sale of bottled water is allowed.

June

November

December

- Destruction of the eco-system in the Dukyoo, Solak, and Jeree National Park area is reported; NGOs and academics lead a number of campaigns against the destruction.
- Demolition of the Namsan Foreigners' Apartment Complex takes place as a means of restoring the eco-system in the Namsan area.
- Demolition of structures that pose a negative impact to the environment is planned. This is the first of such projects.
- The Ministry of Environment becomes a cabinet-level ministry

1995

January

- The first "environmentally friendly companies" are designated by the MoE, based on their environmental protection standards.
- The Volume-Based Waste Collection Fee System is implemented nationwide.
- The construction project for the Comprehensive Environmental Information System is started as a means of providing environment-related data to the general public.

July

- The Ozone Warning System begins operation.
- The oil tanker, the Sea Prince, crashes, causing an oil spill in the South Sea area.
- The occurrence of a red tide in the South Sea causes major damage to marine life.

November

- Construction plans for the Kulup Nuclear Waste Storage Site are completely cancelled due to scientific evidence found by scientists.

1992

January

- Pursuant to the Basic Environmental Policy Act, Korea launches its Long-Term (10 Year) Environmental Plan, Green Vision 21.
- Damage to a significant portion of the Greenbelt Area as a result of land deregulation is reported.

May

- The construction of the Weecheon Industrial Complex creates conflict between the residents of Daegu and those of Pusan and Kyungnam.

June

- Lake Seehwa, a human-made lake, built at a cost of one-trillion won, becomes a lake of death when pollutants from a nearby industrial complex contaminate neighbouring eco-systems and the lake.
- Contamination at the Yeochon industrial complex becomes a highly-visible

issue after a study conducted by the Korea Institute of Science and Technology (KIST) indicates that contamination levels of pollutants at this complex are far below government standards.

- A massive death of fish occurs in the Hantan and Nakdong Rivers, while blue-green algae is found to be thriving around the Paldang Dam, a major water supply source for Seoul.

July

- One million people petition against the construction of a golf course in the Gaya National Park Area.

August

- Operations at the Youngkwang Nuclear Power Plant are suspended due to a suspected radiation leak.

November

- Seoul Metropolitan Waste Management Authorities attempt to stop accepting wet food waste, which subsequently causes heightened awareness of how household waste is handled.
- A number of NGOs, including the Green Coalition, actively work to save Asian black bears and other endangered species.

CHAPTER 10

Human Development Issues and Strategies in Korea

Korea has achieved considerable economic progress in the past three decades. However, in terms of quality of life, Korea is apparently far behind other developed countries. This situation must be addressed, even more so with the growing demand by the people as the national income level increases.

Despite the nation's economic success, many people are still struggling to secure a basic livelihood, which requires a more concerted effort on providing expanded welfare services and programmes aimed at assisting the underprivileged and most vulnerable.

The actual level of the people's quality of life is low, which is evident in the uneven distribution of wealth, low government spending on social welfare, the high rate of traffic accidents, and environmental pollution.

Overall, outstanding progress has been made in the areas of income, education and population control, while progress in terms of gender equality and environmental sustainability still need improvement. The following chapters summarise the major issues for each area in question from the perspective of human development, along with a discussion of related future strategies.

10.1 Poverty

Economic growth created many job opportunities that in turn led to the significant alleviation of poverty. The alleviation of absolute poverty in Korea can largely be accredited to labour-intensive industrialisation and investments in upgrading human resources. Success in labour-intensive industrialisation led to job opportunities for the

unemployed and underemployed as well as new members of the workforce. For example, the rate of underemployed was reduced from 7.6 percent in 1965 to below 1 percent in 1993. The rapid growth in output and employment through labour-intensive industrialisation laid the bases for a relatively egalitarian growth process in which a rising demand for labour ensured full employment and increased wages.

In addition, government policy for alleviating poverty focused on how to enhance the self-reliance of the poor. There are two types of poverty alleviation strategy: direct government intervention aimed at providing the poor with basic needs and subsidies, and an indirect approach to enhance their income earning ability.

A number of direct anti-poverty programmes are included in the Public Assistance Programme, based on the belief that every human being has the fundamental right to the basic necessities in life, guaranteed by the government.

The Livelihood Protection Act was enacted in 1982 to guarantee a minimum standard of living to those who could not sustain basic living without support. The types of support consist of livelihood aid, medical aid, self-support aid, educational aid, maternity aid, and burial aid. These aids are classified into three categories: home care, institutional care and self-support care. In addition, Cash Benefit Assistance is provided to two types of the extremely poor, those in public facilities and those in private homes.

While the Livelihood Protection Act directly assists the poor through a cash allowance to meet their basic necessities, they

are also indirectly supported by programmes that enhance their ability to earn higher income.

Indirect programmes provide support through vocational training and capital loans. The poor receive vocational training to improve their skills, which subsequently helps them to emerge from poverty. Government subsidises tuition and living expenses during the period of training, in addition to accommodating expenses for training preparation and job-searching. Apart from training, the poor can receive loans for small businesses and housing rents at low interest rates with a long-term pay-back period.

In 1977, the Medical Assistance Programme was established to provide medical services for those who could not afford medical care. This programme provides access to medical services free of charge for those below the poverty line and unable to work. For low-income persons who are able to work, the programme pays 80 percent of hospital costs and all outpatient expenses.

10.2 Health and Population Control

Like many developing countries, one of the most outstanding benefits of development was the notable improvement in people's health. The life expectancy of Koreans at birth increased to 77.4 years for women and 69.5 years for men in 1995. Almost all expectant women now receive prenatal care services and can have their babies at a medical institution. Nationwide coverage under the medical insurance scheme has increased the utilisation of health services and enhanced the level of health for all people. These improvements in health and medical services combined with changes in socio-economic conditions and life styles have caused a transition in morbidity and mortality patterns to the level of an industrialised country. Now the government aims to promote good health nationwide and implement disease prevention programmes in line with the people's environmental and behavioural changes

so as to reduce health risk factors. The enactment of the Health Promotion Law is a part of such efforts. A wide disparity in the distribution of health resources exists between urban and rural areas. Hence, the government has continuously increased the supply of health manpower and facilities in rural areas. Among these efforts are the establishment of private medical institutions provided with financial incentives, expansion of Public Health Centres to the hospital level in remote areas, construction of Primary Health Care Posts operated by Community Health Practitioners, and a supply of Public Health Doctors. A series of government efforts have produced remarkable results by narrowing the regional gap in terms of medical resources.

All Koreans are covered either by the compulsory health insurance scheme or by the medical aid scheme for the poor. The most prominent characteristic of the health insurance scheme is that the bulk of financing is raised from private sources via premiums, co-payments and deductibles, rather than from public sources. Under the fee-for-service system, all service charges are reimbursed according to a fee schedule set by the government. However, this system has not been operating smoothly. Insurers complain that most fees are set too low and that the non-insured are charged almost twice as much as the insured. Thus, an extended list of reimburseable services and a gradual reduction of patient co-payments has been suggested.

In turn, another factor contributing to economic development was population control. Since Korea is one of the most densely populated countries in the world, a drastic decline in population growth was a top priority in obtaining high growth of per capita income. The annual population growth rate hovered around 1.0 per cent and the total fertility rate had fallen to 1.75 in 1994, which is below the replacement level. Nowadays differences in the low level of fertility between urban and rural areas and between high and low income families are

insignificant. Although some controversy on future population policy prevails, Korea seems to be nearing the final stages of population control as far as the quantity of population is concerned.

Population control did not just bring about economic development, it created social problems as well. Induced abortion became popular and the sex ratio at birth became extremely unbalanced in favour of male offspring. The combination of selective abortions and the male offspring preference have put maternal health at risk, which will bring about a marriage squeeze in the near future. In order to cope with these future problems, the government has taken action to forbid prenatal sex identification and induced abortion in principle. Nevertheless, these measures appear to be effective only in the short run, as proven by the slight change in the sex ratio at birth in recent years. Moreover, the fundamental problem of the inferior social status of women must be improved in the long run.

10.3 Education

One economic development strategy was to generate a sufficient pool of low-cost but well-educated workers. To obtain this goal within a short period of time, the government placed top priority on education policy to provide primary and secondary education for everyone. As a result, Korea was able to achieve universal education in primary schools as early as the mid-1960s, in middle schools by the late 1970s and in high schools by the mid-1990s. By 1996, the enrollment rate in tertiary education stood at 61.8 per cent.

In many developing countries, expansion of the educational system has not necessarily brought about economic growth; instead, there has been an increased number of educated unemployed, causing social problems. In contrast, educational expansion has been well coordinated with economic development in Korea, mainly due to two closely inter-related factors: low educational cost per

student and a lower government share of the educational burden. The unit cost of education has remained relatively low in Korea due to overcrowded classrooms and low wages for teachers. The government's share in the burden of educational spending in Korea is less than in other developing countries. Total private educational expenditures are 1.04 times greater than spending on public education. The GDP share of public education expenditures has held at a mere 5 percent, and its ratio to total government expenditures has been less than 15 percent over the past three decades. This minimal government share in the educational burden has been substituted by parents' great willingness to make outstanding financial sacrifices for their children's education. It is astonishing that as much as 10 percent of household budgets has been set aside for the education of children in both urban and rural areas.

In spite of the high enrollment rate, the quality of education has yet to be improved. It is especially evident in such indicators as the ratio of students per class or students per teacher, double-shift classes, and school facilities. With respect to learning content, cramming for the preparation of college entrance exams is emphasised in the educational system rather than diversifying the student's learning ability and nurturing creativity. The overwhelming financial burden shared by the private sector, including the families of students, is another social problem that needs to be solved. At the beginning of the 1990s, the physical environment of primary and secondary education was enhanced with the rapid decline of the school-aged population. On the other hand, the financial burden on households to educate their children has consistently increased in both urban and rural areas. Government educational policies fail to cope with these problems effectively. An increase in the government's education budget is one of many solutions for such problems in the short run. However, since the fundamental cause of these problems lies in the enormous disparity between college graduates and non-graduates as far as partic-

ipation in the country's economic, social, and political life is concerned, a long-term solution in creating an equitable society with respect to educational disparities must be provided.

10.4 Gender Equality

Although Korea ranks high in the Human Development Index, the social, economic and political participation of Korean women is still among the lowest in the world. Economic development has improved women's relative status in terms of developing their abilities and skills in the areas of health and education; however, the social, economic and political participation among educated women has remained insignificant up until recent years.

Despite the low status of women, their participation in economic activities has substantially increased over the past three decades. During the early stages of economic development, a large number of young female workers held jobs that required no skills, such as in export-oriented, labour-intensive manufacturing industries. In 1996 almost half of all women aged 15 and over participated in economic activities, comprising 40.4 percent of the economically active population. However, the economic participation of women of childbearing and child-rearing ages remained unchanged due to two underlying factors. The first was discrimination against women in the workplace, for instance, the general assumption that all women permanently leave the workforce once they are married. The other factor is due to the lack of institutional preparation for alternative child care. Therefore, working women are most likely to be less educated or raised in families undergoing economic hardship. Working women are related to the lowest paying jobs, limited in their job tenure and mobility, and receive lower wages compared to men. The women's average wage relative to men's was only 59.9 percent in 1995.

In the labour market, female workers are

constantly facing sexual discrimination such as restrictive recruitment practices, limited opportunities for promotion, unstable employment as well as wage gaps between sexes. Although discrimination against working women still exists, working women have slowly been climbing the corporate ladder. In all aspects of women's economic activities, progress is slow but consistent. The attitudes toward female employment have become more favourable both among women and men, particularly as the 1990s got underway. The government's aggressive implementation of policies focused on providing child rearing supports has helped substantially. The government's budget for childcare facilities increased by a factor of 5.7, going from 41.9 billion won in 1991 to 237.9 billion won in 1996. Such a large amount of investment expanded the number of childcare facilities and children by 2.7 and 3.8 times, respectively within five years from 1991 to 1996. An informal solution of increasing the husband's share in homemaking was deemed impossible to achieve in a short period of time. Thus, more childcare facilities are being prepared to stimulate the participation of married women in the workforce since childcare is the foremost barrier.

Politics were the area most closed to women up until the 1990s. Even though the 1948 Constitution guaranteed equality of the sexes in all political activities, the actual participation of women is extremely minimal. In the 1996 National Assembly elections, only 2.6 percent of the candidates were women. Only 2 women were elected through direct election for 253 seats, while women were appointed to 7 out of 46 positions under the proportional representation system. Besides the exclusion of women from the formulation of laws and policies, they have not been involved in public policymaking or in its implementation process. In the executive branch, 91 percent of women are concentrated in the lower levels of grade seven or below, while 4.2 percent are in higher levels, grade five and above. In order to rectify low number of women in civil posi-

tions, the government introduced a quota system for female civil servants in 1996. According to the plan, the proportion of women who pass the Higher Civil Service Examinations is projected to increase 20 percent by the year 2000. As the 1990s began, the under-representation of women in social and political activities drew serious attention in Korean society. Together with this heightened awareness of the status of women, the government's policies aimed at expanding the role of women in these areas is expected to help accelerate women's economic and political participation.

10.5 The Environment

Korea is now paying the high cost of its neglect of environmental quality. Much evidence shows that serious environmental problems are not only lowering the quality of life but jeopardising future economic growth itself. Environmental conservation has been and will continue to be a major social concern in Korea. The complexity of the country's environmental issues is a result of various factors: serious industrial pollution in major industrial complexes, high ozone concentrations, collection and treatment problem of solid waste, sewage treatment in metropolitan areas, high development demand in ecologically-valuable areas, and so on. Moreover, the local autonomy system from the early 1990's has different affects on the environment. Some local governments are giving more attention to environmental protection than ever before while others are still emphasising regional economic development, even sacrificing environmental quality. Serious environmental disputes between local governments and the attitude of not-in-my-backyard (NIMBY) has become another emerging matter. The globalisation of environmental issues and problems is a major challenge for Korea. Deterioration of the global ecosystem due to climatic changes, ozone depletion, desertification, and deforestation require close international cooperation. Furthermore, transboundary pollution

problems such as acid rain necessitates close regional cooperation with neighbouring countries.

In order to cope with rising environmental problems and to satisfy the peoples' desire for a clean environment, Korea needs a new administrative system and effective environmental policies that can mobilise the resources and energy of all social sectors. In preparation for the 21st century, or the so-called Century of the Environment, Green Vision 21 was formed in 1995 for the sole purpose of providing advanced environmental administrative services and creating a national consensus for environmental protection. The 1995 Green Vision 21 presents a comprehensive set of water management goals as well as quantitative targets. At the most general level, its aims are to provide safe water in sufficient quantities and to make rivers, even small ones near cities, suitable for fish. Beyond this general aim, 11 sets of more specific objectives are defined, ranging from quality objectives for water supply sources, to sewage treatment connection rates, to improved coordination of national water management policy. It also proposes a substantial reduction of smog in large cities and industrial complexes to raise overall air quality and stipulates a timetable for the gradual strengthening of standards for ambient air quality and diesel exhaust emissions, as well as of fuel specifications. The National Comprehensive Waste Management Plan, prepared in 1993 and revised in 1996 to cover 1996 through 2001, addresses all stages of the waste hierarchy, aims at full implementation of the polluter-pays principle by 2001 and proposes to shore up the recycling industry through the tax system and government procurement policies. The Master Plan for the Preservation of the Natural Environment (1994-2003) seeks to strike a balance between preservation and development and to maintain the diversity and balance of natural ecosystems. Its long-term objectives include the restoration of damaged natural ecosystems, while short-term objectives are directed toward achieving

an efficient preservation policy, extending green areas and strengthening wildlife protection.

10.6 Challenges and Prospects

Challenges

The 21st century will be an era of new challenges, opportunities and possibilities for the Korean people. In light of the changing world order since the end of the cold war, Korea must be readily aware of current world events by participating as a member of the global community of nations that focus on social development. Moreover, it is our belief that a comprehensive social community must be established through harmony of growth and welfare.

As we enter the 21st century, every social class will be a part of the various social welfare services intended to stabilise and improve the quality of living. Hence, it is time for Korea's welfare policy to enter a new phase. Welfare schemes must be re-examined, particularly the expansion of welfare investment in hopes of finding a model that efficiently integrates economic growth and welfare. This will then by necessity entail the setting of priorities and increasing the productivity of welfare spending.

Korea's per capita GNP is expected to increase and as the level of income increases, the people will increasingly demand better and more diversified social welfare services.

More recreational facilities, health care and various social welfare services will also be demanded. Now that the material concerns of daily living have been met, a growing thirst for cultural and mental stimulation will occur within Korean society.

The people's demand for government services and agencies to protect them from industrial disasters, poor working conditions, changes in the patterns of diseases and the harmful effects of polluted environments, as well as psychological stresses caused by social trends and rapid changes in society, will also be heard.

As a result of the decreasing birth rate

and prolonged life expectancy, Korean society is rapidly ageing. In addition, the shifting family structure, and the trend toward smaller-sized families, calls for welfare programmes that are designed to deal with specific social changes. Consequently, the new welfare model should be flexible enough to allow policy planners to target specific groups, such as children, women, and the elderly.

Certain political factors are contributing to the need to redesign the welfare system as well. With the recent trend toward decentralisation, which has given more autonomy to local governing bodies, the specific responsibilities and functions of local and central governments must be clarified, which includes redefining their roles within the system that provides welfare services. Moreover, looking into the future, we must consider the possibility of reunification of the Korean peninsula.

Therefore, the next several years will be an important period for us as we attempt to build an advanced welfare system in preparation for the 21st century. We must prepare the base of a welfare nation, one in which economic, social and cultural welfare are merged in order to accomplish continuous economic growth while at the same time providing the means for everyone to lead a stable and comfortable life at a higher material and spiritual level.

Thus the creation of a new paradigm is required, one capable of blending growth and welfare harmoniously in order to achieve long-term balanced development, which would signify a break from the previous concept of a dichotomy between growth and welfare. Through measures focused on human-resource development, welfare projects should function to stimulate the growth of the people's potential, while at the same time attempting to distribute the results of socio-economic development fairly, an essential requirement for elevating the quality of life.

Prospects

Korea's international and domestic environment is now experiencing a wave of changes as the world moves into the 21st century. As the country prepares a new national development strategy, these changes are presenting challenges as well as opportunities.

The vision of Korean society in the forthcoming 21st century is of a productive and mature society with a high quality of life. A productive society refers to a robust society that sustains a high quality of life and stores intellectual assets through opportunities for education/retraining and the active involvement of the people in social affairs.

Considering the limited source of funds available for social security and the inadequate social welfare budget, social welfare spending should increase at a higher rate than the government's general increase in financing. Furthermore, by maintaining this policy, welfare spending can be gradually increased. Raising the rate of increased social welfare expenditures by 1.2 times, the annual rate by which the government increases its financing up to the year 2010 may result in 100 percent of expected international average spending. Lastly, to provide adequate support for impoverished households, the proportion of government financing of public assistance and social welfare should be increased between 1996 and 2000.

The environmental factors that will affect the quality of life for Koreans in the 21st century can be predicted. First, as the globalisation of the world advances through the rapid development and application of information technology, each country will engage in the global game in order to maximise the quality of life of its people by accumulating and improving its human capital, the concept suggested at the World Summit for Social Development held last year in Copenhagen.

Second, productivity related to the quality of life will be emphasised in terms of quality rather than quantity.

Third, the ageing population structure and nuclear family trend will transfer the

responsibility of family support to society at large. Also, as the localisation of the government system is firmly established, the demand for various social welfare services, arising from specific local environments, will surface.

Fourth, a nation's level of development will be measured by giving more weight to the personal quality of life.

Fifth, assuming that the unification of North and South Korea occurs, the pressures on welfare spending will be increased as the government attempts to eliminate differences between the factors affecting the quality of life in South and North Korea.

Based on the outlook for the 21st century, the establishment of a new national development paradigm is needed. This paradigm should improve the level of welfare and the quality of life of our communities, as well as strengthen the nation's competitive power. In order to achieve these goals, we need to consider a radical change in policy orientation. Development strategy should focus on establishing a coexisting market economy system in which priorities for national resource allocation strive to balance continuous growth and improvement of the quality of life.

Several detailed policy tasks for advancing the quality of life need to be laid out. First, as a development model that maximises the synergy of the interaction between the quality of life and the enhancement of competitive power, the government should bolster client-centred administration services and relinquish those sectors that are considered to be inefficient to the private sector. In the area of welfare, the government should strengthen the framework of policy intervention as well as of financial support, giving serious thought to structural changes in government policy in order to efficiently draw from private resources.

Second, in order to increase the participation of women in social affairs, flexible working hours and an at-home work system should be introduced. Furthermore, priority should be placed on efforts to remove such barriers as the age-based seniority system in

order to expand the employment opportunities of senior citizens.

Third, improvement of the distribution of wealth should be comprehensively approached as a way of establishing equality of opportunity for education, expanding opportunities regarding economic activities for women and senior citizens, and developing the foundations of fair competition. At the same time, aid programmes for the poor should consider not only a volume increase but also the productive and preventive aspects of the programmes.

Fourth, to improve the quality of people's health, the current concept behind the medical insurance scheme, which is mostly of reimbursing treatment, should be transformed into a health insurance that provides disease prevention and health maintenance services for everyone.

Fifth, to achieve continuous socio-economic development, the social costs of environmental deterioration should be internalised and the environmental industry should be nurtured until it becomes a high value-added industry. In addition, to pursue the improvement of cultural welfare, national land development policies should be sys-

tematically linked to the development of facilities for cultural activities, sports and leisure.

In the process to achieve further national advancement, the aims of government policies should be transformed from development strategies partially inclined toward quantitative growth into well-balanced development strategies that strive to improve the quality of life for everyone. To realise this goal, the current quantity-oriented value system should be transformed to make it quality-oriented. Moreover, each economic entity should be equipped with an ethical base for public servants, a code of conduct of entrepreneurship, diligent workers and thrifty people. Based upon these foundations, our country could be rebuilt under coexisting market principles.

In conclusion, we need to establish a new paradigm of the long-term national development strategy which strengthens the social safety net by improving distribution of wealth and social welfare programmes. Also, the strategy should strive to promote health, restore the environment, and advance cultural, while at the same time accomplish economic growth.

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