

# Introductory Chapter

## State of the Global Environment and the Development of Individual and Community Efforts

### <Summary of Introductory Chapter>

Today, while the international community is making steady progress in tackling environmental problems, the deterioration of the global environment is becoming serious, which in turn aggravates social problems on a global scale. Before addressing the main topic, this chapter gives an overview of the world situation since the 1992 United Nations Conference on Environment and Development (Earth Summit) and highlights the importance of the efforts made by individuals and communities in their own positions.

## Section 1: State of the Global Environment and Society

### 1. Change in the Socio-economy

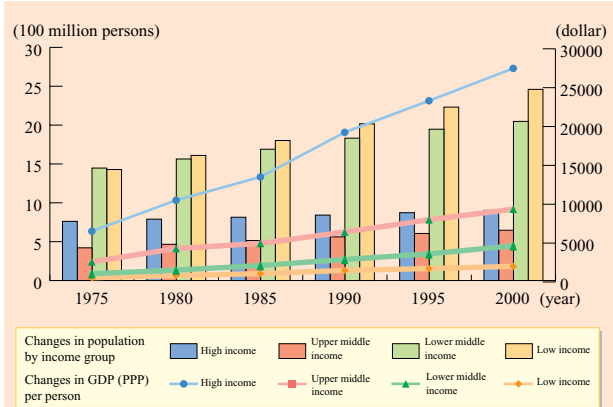
Globalization of the economy and society advanced rapidly in the 1990s, as exemplified by brisk transborder business by corporations, improvements in international transportation, and remarkable progress in information and communications technologies. The world is becoming metaphorically smaller, and countries have become increasingly interdependent. On the other hand, the world's population has grown by about 800 million in the decade between 1990 and 2000. According to the United Nations Environment Programme (UNEP) report, the gap between the rich and the poor has also widened, with one-fifth of the world's richest accounting for 86% of the world's GDP and one-fifth of the poorest accounting for only 1% of the world's GDP.

### 2. State of the Global Environment

With this change in the socio-economy, the global environment faces a serious situation.

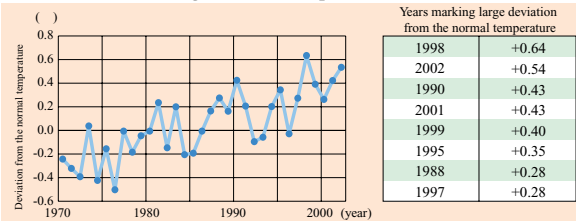
In terms of global warming, the world's average temperature in 2002 was the second highest on record. This high-temperature trend has continued since the mid-1980s. If we continue our present lifestyle, we may be affected in the future. According to the "Influence of Global Warming on Japan 2001", which summarizes studies on the effects of global warming on Japan, a rise of one meter in the sea level would cause a land area under the average high-tide level in Japan about 2.7 times the current level. The number of people and value of property that will be affected will increase from 2 million to 4.1 million and from 54 trillion yen to 109 trillion yen, respectively.

Changes in GDP and Population by Income Group



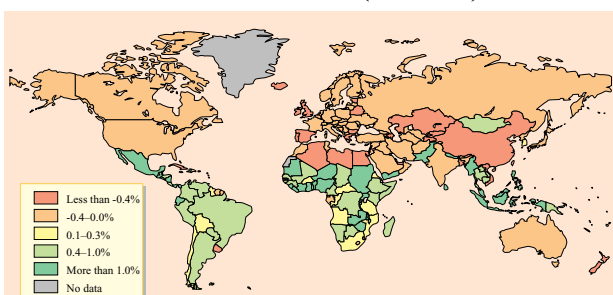
Note: The World Bank's definition is used for the classification of high, upper middle, lower middle and low income groups. Source: Compiled from *World Development Indicators 2002*, World Bank

Secular Changes in Deviation from the Annual Global Average Surface Temperature since 1970



Source: Compiled by the Ministry of the Environment based on information from Japan Meteorological Agency

Annual Deforestation (1990–2000)



Source: *World Bank Atlas 2002*, World Bank

In terms of forests, a total of about 9.4 million hectares of world forests (an area equivalent to the total area of Japan's Chugoku, Shikoku and Kyushu regions) were lost to large-scale forest fires, excessive harvest of wood for fuel, overgrazing and commercial logging in the decade between 1990 and 2000.

Soil degradation is caused not only by climatic factors but also is aggravated by human activities such as agriculture, grazing and improper logging that lead to deforestation. The UNEP reports that about 15% of the earth's land area is affected.

Furthermore, the occurrence of yellow sand and the frequency of its movement in the northeast Asian region, including China, have increased in recent years. According to newspaper reports, the large-scale yellow sand fallout that took place in 2002 was of such severity that visibility in China was so poor that it was impossible to see the building next door, airports and schools were closed down in Korea, and regional transportation in Kyushu, Japan was disrupted.

Today, many countries are faced with various water problems. Over 3,000 people died in a flood along China's Chang Jiang River basin in 1998. About 13 million people in southern Africa faced a serious food crisis in 2002 caused by a drought said to occur once every decade.

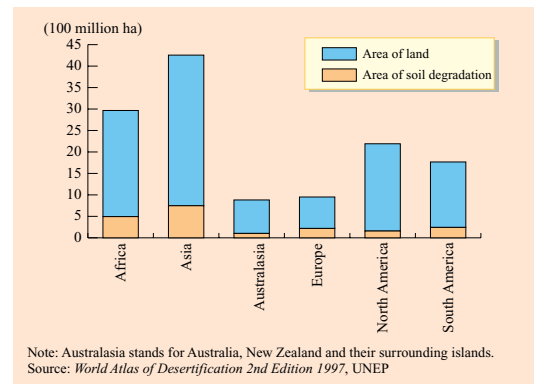
### 3. State of the Global Environment Seen from Its Relationship with the Society and Economy

The global increase in environmental load is linked to the society and economy in a complex manner.

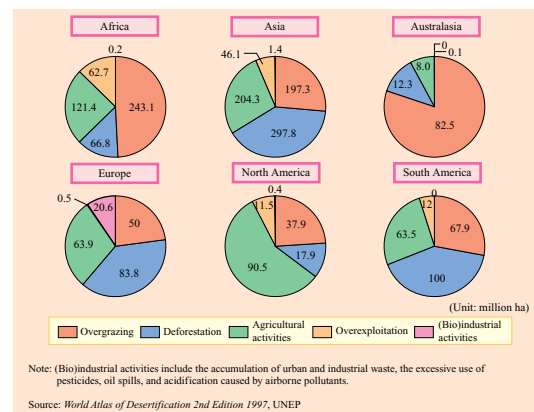
For example, while globalization of the economy helps spread eco-conscious products and technologies to various countries in the world, the international distribution of goods may also increase energy consumption and cause problems with the transboundary movement of hazardous wastes. Furthermore, the deterioration of the environment in developing countries caused by excessive cultivation, grazing and logging of forests exceeding their natural recovery capacity will not only make it difficult to secure sufficient resources and food and worsen poverty but also cause conflict and give rise to environmental refugees.

With regard to the relationship between population increase and the water issue, the *UN World Water Development Report* pointed out that the increase in population also increases the demand for water and lowers the per capita water supply. The concentration of population in the cities of developing countries due to population growth and poverty further worsens the problem. In fact, about 170 million people in cities and 920 million people in rural areas do not have access to safe water supply. Without a

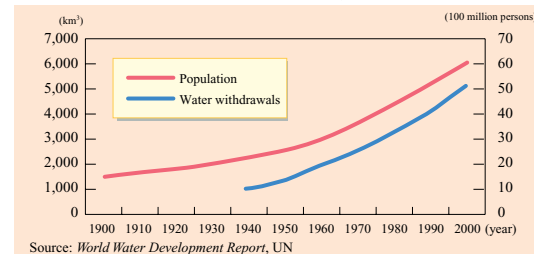
**Soil Degradation by Region**



**Soil Degradation by Major Cause**



**World Population Growth and Changes in Freshwater Use**



**Water Supply and Sanitation Coverage by Region**

Water supply		Population (2000)	Population served (2000)	Population (2015)
Africa	Urban	297	253 (85%)	501
	Rural	487	231 (47%)	577
Asia	Urban	1,352	1,254 (93%)	1,943
	Rural	2,331	1,736 (74%)	2,404
Latin America and the Caribbean	Urban	391	362 (93%)	504
	Rural	128	79 (62%)	127
Oceania	Urban	21.3	21 (99%)	25.7
	Rural	9.1	5.7 (63%)	10.4
Europe	Urban	545	542 (99%)	566
	Rural	184	161 (88%)	154
North America	Urban	239	239 (100%)	278
	Rural	71	71 (100%)	66
Total		6,055	4,956 (81.8%)	7,154

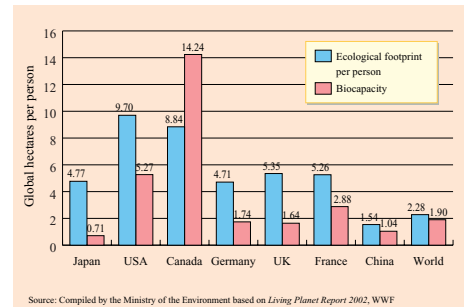
Sanitation		Population (2000)	Population served (2000)	Population (2015)
Africa	Urban	297	251 (85%)	501
	Rural	487	220 (45%)	577
Asia	Urban	1,352	1,055 (78%)	1,943
	Rural	2,331	712 (31%)	2,404
Latin America and the Caribbean	Urban	391	340 (87%)	504
	Rural	128	62 (48%)	127
Oceania	Urban	21	21 (100%)	25.7
	Rural	9.1	7.3 (80%)	10.4
Europe	Urban	545	537 (99%)	566
	Rural	184	137 (74%)	154
North America	Urban	239	239 (100%)	278
	Rural	71	71 (100%)	66
Total		6,055	3,652 (60.3%)	7,154

Note: Since figures are rounded off, the sum of the numbers may not add up to the figures in the "Total" column.  
Source: *Global Water and Sanitation Assessment 2000*, WHO

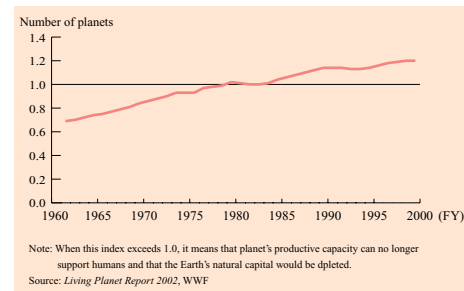
supply of safe water, human health will be affected, resulting in lower productivity, less income and poverty. It is estimated that the world's population will increase 1.1 billion by 2015 with 88% of that population residing in cities, making it especially important to improve municipal water supply systems in cities.

For humankind to survive within the complex relationship between the environment, society and economy, environmental considerations must be incorporated into a socio-economic system that considers the finite nature of the earth. According to a World Wide Fund for Nature (WWF) estimation that compared humankind's consumption of resources to nature's productive capacity, the consumption of resources by humanity already exceeded nature's productive capacity in the 1970s. In view of this, Japanese must reduce current resource consumption by half in order to live within the environmental carrying capacity of the earth. We must take steady and effective measures towards the building of a sustainable society.

**Ecological Footprint by Country**



**World Ecological Footprint (1961–1999)**



## Section 2: Building of a Sustainable Society from Individual and Community Efforts

### 1. Johannesburg Summit

Within the close relationship between the environment, society and economy, the root of global environmental problems lies, after all, in people's daily activities in their homes and communities. From this perspective, individual and community efforts are extremely important to build a sustainable society.

In the Johannesburg Summit, national governments, as well as international organizations, local governments, NGOs (non-governmental organizations) and businesses, participated as actors on equal basis and voluntarily announced the implementation of specific projects for achieving sustainable development. "Record of Commitments/Partnerships" of these projects was prepared. Given these achievements, each actor must implement the specific measures it declared at the Summit. As such, individual and community efforts are already beginning at the international level.

### Outcomes of the Johannesburg Summit

Type-I-Outcomes: Documents summarizing the results of negotiations and agreements between governments.

#### The Johannesburg Declaration on Sustainable Development

- A document showing the resolution of head of states to pursue sustainable development. It describes the environment, poverty, and other issues faced by different countries and states the commitments of these countries to improve access to safe drinking water, basic sanitation, energy, food safety and security, etc.; make efforts to contribute ODA at the internationally agreed levels; and strengthen governance.

#### Plan of Implementation

- A document about initiatives to promote the implementation of Agenda 21. The document is made up of various sections including "Introduction, Poverty eradication, Changing unsustainable patterns of consumption and production, Protecting and managing the natural resource base of economic and social development, Sustainable development in a globalizing world, Health and sustainable development, Sustainable development of small island developing states, Sustainable development for Africa, Means of implementation, and Institutional framework for sustainable development."

Type-II-Outcomes: A document describing voluntary and specific initiatives proposed and declared by each actor. The projects declared by various actors are non-binding in nature. They are called "Type-Twos" to differentiate from agreements.

#### Record of Commitments/Partnerships

- These are partnerships and initiatives for implementing the Type-I-outcomes. They are specific projects carried out in conjunction with the governments of various countries and international organizations for sustainable development. Japan has registered 30 projects with the United Nations Secretariat, covering the fields of water, forest, energy, education, science and technology, health care, and biodiversity.

Source: Ministry of the Environment

### 2. Trends of Individual and Community Efforts for Coping with Specific Environmental Problems

At about the same time as the Earth Summit, Japan enacted the Basic Environment Law in 1993. Since then, Japan has worked on establishing a framework for building a sustainable society in each area, including the mitigation of global warming, conservation of biodiversity, and the establishment of a recycling-based society. Although each actor is expected to carry out measures according to its role under this framework, given the characteristics and situation of today's environmental problems, each actor must take voluntary and positive initiatives.