

# Economics, Policy, and the Future

## CHAPTER 21

- 1 Economics and International Cooperation
- 2 Environmental Policies in the United States
- 3 The Importance of the Individual



### READING WARM-UP

Before you read this chapter, take a few minutes to answer the following questions in your *EcoLog*.

1. What do you think the world will be like in 50 years? What do you think you will be doing?
2. How often do you make decisions that affect the environment?

In the Chimanimani mountains of Zimbabwe, international groups are working with local residents to manage the natural resources of the area while improving the economic and political status of the residents.

## SECTION 1

# Economics and International Cooperation

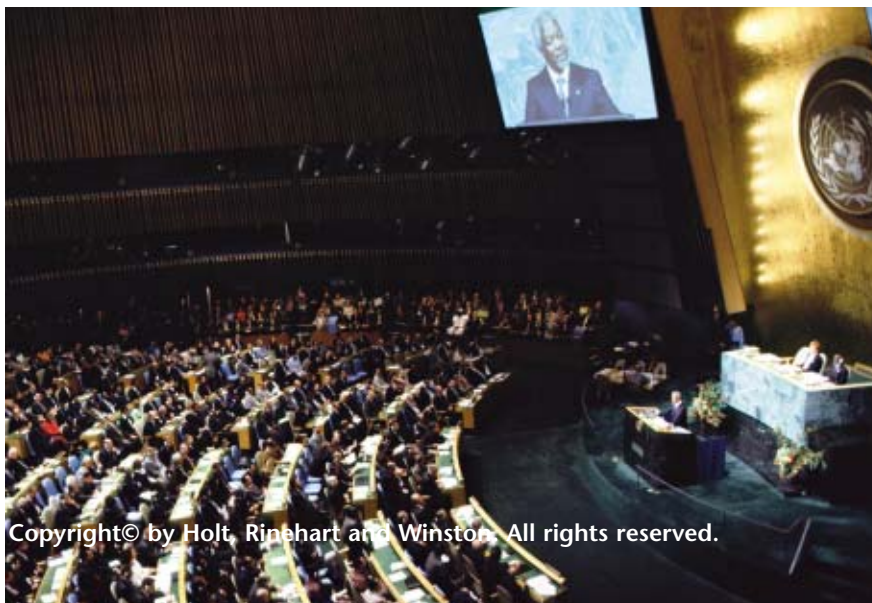
More than six billion people are living on Earth, supported by unprecedented levels of human resource use, productivity, and scientific knowledge. On average, people live longer and have more education than they did 100 years ago. We continue to advance our understanding of human biology, social behavior, and our environment. But we still face many unknowns. Scientists do not agree on how humans are affecting the planet's ecosystems. People worldwide are worried about running short of resources such as fertile soil and fresh water. And many people disagree about how environmental problems should be addressed.

An important question is whether the present human condition is sustainable. **Sustainability** is the condition in which human needs are met in such a way that a human population can survive indefinitely. To plan for a sustainable society, one must understand economics and politics as well as environmental science.

## International Development and Cooperation

We live in a time of *globalization*, when environmental and social conditions are linked across political borders worldwide. People cross borders in search of economic opportunities and a better quality of life. Increasingly, governments, organizations, and businesses around the world have a need to work together.

However, governments do not always agree on how to solve environmental problems. Within and between governments, people debate about who is responsible for environmental problems. People also debate about whether current levels of population growth and resource use are sustainable. Despite these different views, international leaders often meet to identify common goals and address problems, as shown in **Figure 1**.



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## Objectives

- ▶ Describe some of the challenges to achieving sustainability.
- ▶ Describe several major international meetings and agreements relating to the environment.
- ▶ Explain how economics and environmental science are related.
- ▶ Compare two different approaches to regulation.
- ▶ Give an example of a private effort to address environmental problems.

## Key Terms

sustainability  
economics

**Figure 1** ▶ At the 2000 Millennium Summit in New York, world leaders agreed on principles to guide the United Nations in the 21st century. Sustainable development is a shared goal among most nations.

**Table 1 ▼**

International Organizations, Meetings, and Agreements	
Related to Sustainable Development	
<b>The World Conservation Union (IUCN)</b> , established 1948	a worldwide partnership of States, government agencies, private and nonprofit organizations, and scientists and experts from 140 countries; encourages and assists in conservation as well as equitable and sustainable use of natural resources
<b>UN Conference on Human Environment</b> , Stockholm, 1972	first international meeting to consider global environment and development needs; led to the formation of the UN Environment Programme (UNEP)
<b>UN Conference on Environment and Development (UNCED or Earth Summit)</b> , Rio de Janeiro, 1992	meeting that produced Agenda 21 and the Rio Declaration (Earth Charter), which outlined key policies for sustainable development; established the UN Commission on Sustainable Development (UNCSD)
<b>World Summit on Sustainable Development</b> , Johannesburg, 2002	meeting to review 10-year progress of Agenda 21 and to consider several major treaties
Related to Climate and Atmosphere	
<b>Intergovernmental Panel on Climate Change (IPCC)</b> , established 1988	group of scientists from around the world that studies the scientific, social, and economic aspects of human-induced climate change
<b>Framework Convention on Climate Change</b> , Rio de Janeiro, 1992	agreement that established international recognition of the problems of climate change; proposed strategies to limit greenhouse gases
<b>Montreal Protocol on Substances That Deplete the Ozone Layer</b> , 1987	agreement by many countries to eliminate substances, such as CFCs, that damage the atmosphere's protective ozone layer
<b>Kyoto Protocol on Climate Change</b> , 1997	agreement to reduce worldwide emissions of greenhouse gases; requires larger reductions by developed countries; allows trading of permitted levels of emissions; promotes pollution-free development

**Connection to Law**

**Small Islands, Global Issues**

The United Nations Global Conference on the Sustainable Development of Small Island Developing States met in Barbados in 1994. The conference produced a declaration that included the following statement: "While small island developing States are among those that contribute least to global climate change and sealevel rise, they are among those that would suffer most from the adverse effects of such phenomena and could in some cases become uninhabitable."

**Sustainable Development** Many meetings and agreements among international governments have dealt with environmental concerns along with economic and political concerns. Some important examples are listed in **Table 1**. The Earth Summit of 1992 in Rio de Janeiro, Brazil, was a sign of new levels of international environmental awareness and cooperation. Representatives from around the world drew up several agreements. One of these was Agenda 21, a general plan to address a range of environmental problems while allowing continued economic development.

**Climate and Atmosphere** International organizations and agreements related to climate and the atmosphere are also listed in **Table 1**. One treaty, the Montreal Protocol, successfully reduced the amount of ozone-destroying chemicals in the atmosphere. However, not all agreements are successful. Any country may choose not to sign, enforce, or provide funding to implement an agreement.

For example, the Kyoto Protocol attempts to avoid or slow down global warming by reducing greenhouse-gas emissions around the world. Most of the developed countries have promised to reduce their emissions by about 5 percent by 2012. However,

an argument against the Kyoto Protocol is that it would be costly to implement, even though it does not guarantee a stable climate. Another argument is that the treaty allows developing countries to continue to increase their use of fossil fuels, while it requires reductions in use of fossil fuels by the developed countries. Mainly for these reasons, the United States did not sign the treaty. However, U.S. corporations doing business in other parts of the world may still be subject to the treaty's requirements.

**Other Agreements** Hundreds of other international agreements have been made as new environmental issues have emerged. Sometimes, the results make news. For example, you may hear on the news that a cruise line was barred from a port or fined millions of dollars for dumping garbage at sea. The ship would be fined because its actions violate an agreement commonly known as MARPOL. (MARPOL refers to *marine pollution*.) Under MARPOL, large ships cannot dump garbage close to shore. MARPOL also regulates the practice of oil tankers washing out their tanks. As a result, beaches around the world are less polluted with tar despite the increasing volume of oil carried by tankers.



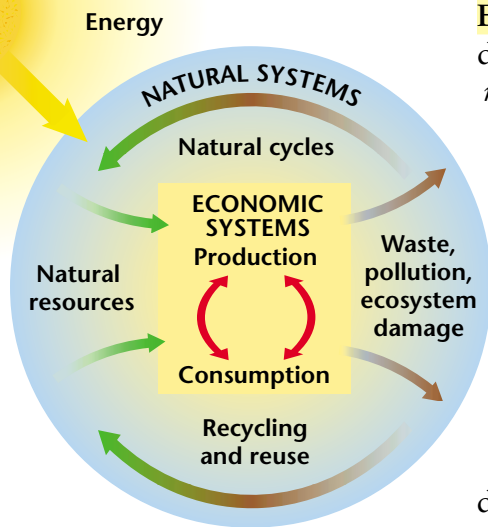
**Table 2 ▼**

Other International Organizations, Meetings, and Agreements Related to the Environment	
Antarctic Treaty and Convention, 1959	agreement to use Antarctica solely for peaceful purposes "in the interest of all mankind" and to cooperate in scientific research there
International Convention for the Prevention of Pollution from Ships (MARPOL), 1973; modified 1978	agreement that regulates disposal of wastes by ships on the ocean: specifies where and how different types of garbage, oil, sewage, and toxic wastes may be dumped
Convention on International Trade in Endangered Species (CITES), 1973	agreement that classifies endangered and threatened species worldwide and monitors international trade of these species; widely adopted and successful for many listed species
Convention on Migratory Species (CMS), 1979	agreement that protects wild animal species that migrate across international borders
Law of the Sea, 1982	agreement that addresses ocean pollution from land runoff, ocean dumping, hazardous materials, oil exploration, mining, and air pollution; designates deep-sea resources as "the common heritage of mankind"
Basel Convention, 1989	agreement that regulates transportation and disposal of hazardous wastes
Convention on Biological Diversity (CBD), 1992	agreement to inventory and protect endangered and threatened species; nations compensate each other for use of organisms in products
Intergovernmental Forum on Chemical Safety (IFCS), 1994	panel that facilitates cooperation among governments for environmentally sound management of chemicals
Cartagena Protocol on Biosafety, 2000	agreement that addresses transportation and use of genetically modified organisms
UN Forum on Forests (UNFF), 2001	panel that promotes the management, conservation, and sustainable development of all types of forests

## Economics and the Environment

**Economics** is the study of the choices people make as they use and distribute limited resources. In the traditional model of economics, *markets* are seen as self-contained economic systems, in which money and products flow in cycles. People within a market will decide the *value* of something by comparing the costs and benefits from their own perspective. For example, people decide how much they will pay for a product or how much they must be paid to do a certain job. These values change over time as people see changes in the costs or benefits of their actions.

Economists say that an economic system is successful when there is *economic growth*, an increase in the flow of money and products within a market. However, economic systems may not account for external factors that do not have a direct economic value, such as air or wildlife. As the fields of economics and various sciences share knowledge, economists develop more complex and realistic models of resource use. The example in **Figure 2** shows that economic systems are contained within and dependent upon the environment. Economies draw resources from the environment and may return waste or cause damage.



**Figure 2** ▶ A complete economic model shows that economic systems operate within natural systems.

### CASE STUDY

## International Whaling: Conflict and Cooperation

Because no country controls the open ocean, the ocean has been treated as if the resources it contains are free for anyone to take. However, people around the world have noticed the disappearance of species and the pollution of their shores. The history of agreements between countries to regulate whaling illustrates both the problems and successes of international cooperation.

Whales were once hunted for their fat, which was used for lamp oil, and they are still hunted for meat. By the 20th century, most large whale species were endangered. So, countries have had to negotiate with each other to hunt for whales and to save whales from extinction.

In 1949, the International Whaling Commission (IWC) voted to limit commercial whaling to a nation's territorial waters. France objected and used a special provision to opt out of IWC rules. France was the first of many countries to use this loophole, which weakens the IWC's ability to create regulations.

The 1949 agreement also established quotas to limit the number of whales a nation could harvest. However, because the quotas specified the number of whales but not the type of whales, the quotas did not prevent the killing of endangered whale species. As a result, blue whales, fin whales, humpback whales, and sei whales were hunted nearly to extinction. Then in 1960,

the IWC suspended quotas entirely. What followed was the largest whale catch in the history of the IWC.

Whales are intelligent mammals, and many people have an emotional desire to save whales from extinction. Because of public pressure to save the whales, the IWC reestablished a quota in 1967. And in 1972, the IWC allowed observers from member nations to monitor the whale harvest of other member nations. In 1977, the IWC created more restrictions on whaling, and passed a resolution urging nations to stop importing whale products. Finally, the IWC called for a total ban on whaling that was to begin in 1984. However, three countries with large whaling industries opted out

Economists see environmental problems as *market failures*. The market has failed if the price of something does not reflect its true cost. For example, the price of gasoline does not reflect the other expenses caused by auto emissions. Illnesses caused by air pollution cost society billions of dollars a year. In a balanced economic system, the price of gasoline should reflect these costs. One difficulty in pricing is that sometimes we do not know environmental costs. An economic system can include only those costs that are understood at the time people make decisions.

**Regulation and Economic Incentives** Governments often try to influence economic systems. Governments may do this by creating regulations or punishing people with fines and jail sentences. Governments may also create *economic incentives* by paying out money for actions that benefit society or charging taxes on actions that have a social cost. For example, some governments offer rebates to people who purchase energy-saving appliances.

Governments have tried many ways to regulate environmental damage such as pollution. However, regulations are criticized when they are difficult to enforce, do not distribute costs evenly, or do not control environmental damage. Governments and economists continue to work on ways to link economic decisions with environmental effects.



**Environmental Ratings** Each year, the World Economic Forum ranks countries on an Environmental Sustainability Index. In 2001, the top five countries were Finland, Norway, Sweden, Canada, and Switzerland. The United States ranked 51st of 142 countries studied. The study also concluded that no country is on a truly sustainable path.



► This Icelandic whaling ship (left) is harvesting fin whales. Blue whales (right) are among the many endangered whale species.

of this agreement—Norway, Japan, and the former Soviet Union.

International debate over these issues has continued. Populations of a few whale species have recovered since whaling was restricted. Other species, such as the right whale, breed so slowly and have such small populations that extinction is likely.

In the 1990s, Norway and Japan continued to claim exceptions to the IWC's rules. Both coun-

tries harvested hundreds of minke whales each year, claiming that the minke population was large enough to survive limited hunting. Norway and Japan have also hunted in the IWC's designated whale sanctuary in the Antarctic Ocean. Japan has claimed that the IWC rules allow the country to harvest whales for research, although the whale meat is then sold as food in Japan.

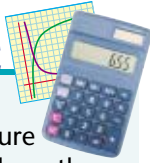
## CRITICAL THINKING

**1. Expressing Opinions** Write a paragraph describing your views about the issue of whaling.

### WRITING SKILLS

**2. Predicting Outcomes** Demand for whale meat in Japan has been decreasing in recent years. Why might this change be happening, and what might be the results of this change?

## MATH PRACTICE



### Nature Conservancy

**Assets** In 2000, the Nature Conservancy owned land worth a total of \$1.3 billion. In 2001, it gained ownership of additional land worth \$322 million. In the same year, it also sold land worth \$88 million and gave away land worth \$12 million to governments and other groups. What was the value of land held by the Nature Conservancy at the beginning of 2002?

**Private Efforts** Businesses and private organizations also play a role in addressing environmental problems. Businesses may donate land for parks or preserves or donate money to environmental causes. Many businesses have found that recycling their wastes can save costs and improve their public image.

Private organizations often cooperate with each other and with governments. Such cooperation may include conducting research or creating plans for environmental management. **Figure 3** shows an area of Africa that several governments and private organizations are working together to manage. Local residents are also included in the process of planning for the area.

The Nature Conservancy is a nonprofit organization that uses a simple economic strategy to preserve ecosystems. This organization collects donations of money and land. If the donated land is not targeted for preservation, the organization trades or sells the land. Large preserves are put together by a combination of donations, exchanges, and purchases of land. The organization has created preserves in all 50 states and in 28 other countries.

**Figure 3** ► The area around Mount Kilimanjaro in Kenya is an important home to wildlife such as elephants and giraffes. Several governments and organizations are working with local residents to manage the area for both wildlife preservation and sustainable economic development.



## SECTION 1 Review

1. **Describe** some of the challenges to achieving sustainability.
2. **Describe** three major international meetings or agreements relating to the environment.
3. **Compare** two different approaches to regulation.
4. **Give an example** of a private effort to address environmental problems.

### CRITICAL THINKING

5. **Analyzing Processes** Write a paragraph that explains why a local government might use tax money to purchase park lands. **WRITING SKILLS**
6. **Applying Ideas** Read about interactions of economics and the environment. List some ways that both governments and organizations could encourage people to conserve resources. **READING SKILLS**