

# 2

## Environmental Economics and Environmental Policy

### Chapter Objectives

**This chapter will help students:**

Describe principles of economic theory, and summarize their implications for the environment

Compare the concepts of economic growth, economic health, and sustainability

Explain the approaches of environmental economics and ecological economics

Describe the aims of environmental policy and assess its societal context

Discuss the history of U.S. environmental policy and recognize major U.S. environmental laws

Characterize the institutions involved with international environmental policy

Delineate the steps of the environmental policy process and evaluate its effectiveness

Contrast the different approaches to environmental policy

### Lecture Outline

**I. Central Case: San Diego and Tijuana's Sewage Pollution Problems and Policy Solutions**

A. In 1996, officials closed all public beaches in San Diego, California, due to stormwater runoff that contaminated local rivers and coastal waters.

B. This also occurred across the border in the Mexican city of Tijuana, whose aging sewer system became clogged, causing raw sewage to overflow into streets and onto beaches.

C. The international **watershed**, all the land from which water drains into a river, of the Tijuana River covers 4,500 km<sup>2</sup> (1,750 square miles), and is home to 2 million people of two nations.

D. Many people in the San Diego and Tijuana areas, from coastal residents to grassroots activists to businesspeople, have pressed policymakers to address this problem.

## II. Economics: Approaches and Environmental Implications

- Economic inequities have exacerbated pollution problems.
- **Economics** is the study of how people decide to use scarce resources.

A. Several types of economies exist today.

An **economy** is a social system that converts resources into **goods** and **services**, or work done for others.

- The oldest type of economy is the **subsistence economy** in which people meet most or all of their daily needs directly from nature.
- In the **capitalist market economy**, buyers and sellers interact to determine the types and amounts of goods and services to produce.
- In a **centrally planned economy**, a nation's government determines how to allocate resources.
- Today, capitalist and socialist economies borrow much from one another and are in fact hybrid systems (often termed **mixed economies**).

B. Environment and economy are intricately linked.

Economies receive inputs from the environment, process them in complex ways that enable human society to function, then discharge outputs of waste into the environment.

- Economic activity uses natural resources, but traditional economic schools of thought have overlooked the importance of the connections, and ignore the environment.
- Environmental systems also naturally function in a manner that supports economies, purifying air and water, cycling nutrients, providing pollination, and serving as receptacles for waste; these are called **ecosystem services**.
- The environment enables economic activity by providing ecosystem goods and services, and economic activity can affect the environment in return.

**C. Adam Smith** helped found **classical economics**.

Adam Smith, the father of classical economics, believed that when people are free to pursue their own economic self-interest in a competitive marketplace, the marketplace will behave as if guided by “an invisible hand” that ensures their actions will benefit society.

**D. Neoclassical economics** incorporates psychology and cost-benefit analysis.

Neoclassical economics examines the psychological factors underlying consumer choices.

- The conflict between buyers and sellers results in a compromise price being reached and the “right” quantity of commodities being bought and sold.
- In **cost-benefit analysis**, the estimated costs for a proposed action are totaled and compared to the sum of benefits estimated to result from the action; the decision on the action then depends on whether benefits exceed costs.
- Not all costs and benefits are easily identified, defined, or quantified, or even identified or defined.
- Economic benefits are more easily quantified than environmental costs, and so they tend to be overrepresented in traditional cost-benefit analyses.

**E. Aspects of neoclassical economics** have profound implications for the environment.

There are four fundamental assumptions of neoclassical economics that have contributed to environmental problems.

- a. Workers and other resources are infinite or substitutable.
- b. Long-term effects, occurring far in the future, should be discounted.
- c. Costs and benefits are internal.
  - 1) The market does not take the costs of pollution into account.
  - 2) Costs or benefits of a transaction are all borne by individuals engaging in the transaction. However, this is often incorrect.

There can be **external costs**, such as health problems or pollution cleanup, which are paid by others.

3) By ignoring the external costs, economies create a false idea of the true and complete costs of particular choices.

d. Growth is required to keep employment high and maintain social order.

F. Economists disagree on whether economic growth is sustainable.

Many observers worry that growth has become an end in itself. Resources are ultimately limited, they argue, so nonstop growth is not sustainable.

- Some proponents of unrestrained growth believe that technology can solve everything.
- **Ecological economists** argue that civilizations do not overcome environmental limitations in the long run.
- Ecological economists advocate economies that are stable, neither growing nor shrinking; these **steady-state economies** are intended to mirror natural ecological systems.
- **Environmental economists** maintain that we can attain sustainability within our current economic systems by modifying the principles of neoclassical economics to address environmental challenges.

G. We can give ecosystem goods and services monetary values.

Ecosystem services are said to have **nonmarket values**, values not usually included in the price of a good or service.

- One technique of assigning nonmarket value is using surveys to determine how much people would be willing to pay to protect a resource or to restore it.
- An alternative approach is to calculate the overall economic value of all services that an ecosystem provides.

H. Corporations are responding to sustainability concerns.

1. Consumers and investors express preferences for sustainable products and services.
2. Some companies such as Ben & Jerry's Ice Cream were founded on sustainable principles. Now, many corporations are adopting sustainable practices.

3. Corporations exist to make a profit. Consumers can choose businesses that are authentically sustainable from those that do not behave in sustainable ways.

#### I. Markets can fail.

**Market failure** occurs when markets do not take into account the environment's positive effects, or do not reflect the negative effects on the environment or on people (external costs).

- Traditionally, market failure has been countered by government intervention.

### III. Environmental Policy: An Overview

1. When a society reaches broad agreement that a problem exists, it may persuade its leaders to try to resolve the problem through the making of **policy**, a formal set of general plans and principles.
2. **Public policy** is policy made by governments, and consists of laws, regulations, orders, incentives, and practices intended to advance societal welfare.
3. **Environmental policy** is policy that pertains to human interactions with the environment. It generally aims to regulate resource use or reduce pollution to promote human welfare and/or protect natural systems.
4. Forging effective policy requires input from science, ethics, and economics.

#### A. Environmental policy addresses issues of equity and resource use.

The capitalist market economic systems of modern constitutional democracies are largely driven by incentives for short-term economic gain rather than long-term social and environmental stability.

- The tragedy of the commons, as explained by Garrett Hardin, is that a resource held in common that is unregulated will eventually become overused and degraded.
- If a community agrees to reduce use, or pollution, in a common resource, but one or two groups or individuals do not participate, they are **free riders** on the efforts of others; this can lead to the system collapsing.
- **External costs** are harmful impacts that result from market transactions, but are borne by people not involved in the transactions.

#### IV. U.S. Environmental Policy

The three branches of the U.S. federal government—legislative, executive, and judicial—are each involved in aspects of environmental policy.

- **Legislation** is passed by Congress, the legislative branch. Implementation and enforcement of legislation is assigned to administrative agencies, sometimes nicknamed the “fourth branch” of government.
- Once legislation has passed, it is then signed by the president, who heads the executive branch.
- **Regulations** are specific rules based on the more broadly written statutory law.

##### A. Early U.S. environmental policy addressed land management.

The early environmental laws were intended to promote settlement, and the extraction and use of the West’s abundant natural resources.

- The Western lands were considered practically infinite, and inexhaustible in natural resources.

##### B. The second wave of U.S. environmental policy addressed impacts of the first.

During this time the government created national parks, wildlife refuges, and the forest system.

##### C. The third wave responded largely to pollution.

The publication of Rachel Carson’s *Silent Spring* awakened the American public to the negative ecological and health effects of pesticides and industrial chemicals.

- The burning of the Cuyahoga River on several occasions in the 1950s and 1960s, along with an oil spill off the Pacific coast near Santa Barbara, California in 1969, moved the public to prompt Congress and the president to do more to protect the environment.
- Earth Day, first celebrated in 1970, continues to be supported by millions of people worldwide.

##### D. NEPA gives citizens input into environmental policy decisions.

**NEPA (National Environmental Policy Act)** was signed in 1970 and requires that an **environmental impact statement (EIS)** be prepared for any major federal action.

E. Creation of the EPA marked a shift in federal environmental policy.

The **Environmental Protection Agency (EPA)** is charged with conducting and evaluating research, monitoring environmental quality, setting and enforcing standards for pollution levels, assisting the states in meeting standards and goals, and educating the public.

F. Other prominent laws followed.

1. Two major laws were the Federal Water Pollution Control Acts (1965 and 1972) and Clean Water Act (1977).

G. The social context for environmental policy changes over time.

## V. International Environmental Policy

A. International law includes customary law and conventional law.

International law arises from long-standing practices, or customs, and is known as **customary law**.

**Conventional law** is international law arising from conventions, or treaties, into which nations enter.

B. Several organizations shape international environmental policy.

The United Nations has taken an active role in shaping international environmental policy, and sponsors environmental agencies.

The World Bank funds economic development, and has frequently been criticized for funding unsustainable projects that cause more environmental problems than they solve.

European Union (EU) is active in environmental affairs.

The World Trade Organization (WTO) has recently attained surprising power, and has the authority to impose financial penalties.

A number of nongovernmental organizations (NGOs) are international in scope and influence international environmental policy.

## VI. The Environmental Policy Process

1. Anyone can become involved in helping ideas become environmental policy.

2. Unfortunately, money wields influence.

A. Policy results from a multistep process.

1. The environmental policy process begins when a problem is identified.
2. Identifying causes of the problem is the second step in the policy process.
3. The third step is envisioning a solution.
4. Getting organized is the fourth step.

Gaining access to political powerbrokers is the fifth step.

- a. Lobbying is spending time or money trying to change an elected official's mind.
- b. Making campaign contributions is another way to get our voices heard.
- c. The movement of powerful officials between the private sector and governmental agencies helps gain political influence and is called the revolving door.

Shepherding a solution into law is the sixth step in the policy process.

B. Science plays a role in environmental policy but can be misused.

1. The best policy follows when policymakers have scientific information.
2. Sometimes policymakers distort science. For example, the Union of Concerned Scientists released a statement faulting the administration of George W. Bush for manipulating, censoring, editing, and suppressing reports.

## VII. Approaches to Environmental Policy

1. Many environmental laws and regulations set strict legal limits, and punishments, in what is sometimes called a **command-and-control** approach. Many people have grown disenchanted with the top-down, sometimes heavy-handed nature of the command-and-control approach.

A. Subsidies are a widespread economic policy tool.

1. A **subsidy** is a government giveaway of cash or publicly owned resources used to promote a particular activity.
2. Subsidies can be used to promote environmentally sustainable activities, but often they have been used to prop up unsustainable ones.

B. **Green taxes** discourage undesirable activities.

1. By taxing activities and products that cause undesirable environmental impacts, a green tax becomes a tool for policy as well as a way to fund government.
2. Green taxes do not have much support in the United States, although they have been widely instituted in Europe.

C. Markets in permits can save money and produce results.

1. The government can issue permits to individual polluters. They may buy, sell, and trade these **marketable emissions permits**; this provides financial incentives to reduce pollution.

D. **Ecolabeling** empowers consumers.

1. Ecolabeling tells consumers which brands use environmentally benign processes.

E. Market incentives are being tried widely on the local level.

## VIII. Conclusion

1. Environmental policymaking is a problem-solving pursuit that makes use of science, ethics, and economics, and that requires an astute understanding of the political process.
2. Conventional command-and-control approaches of legislation and regulation are the most common approaches to policymaking.
3. Equating economic well-being with economic growth, as most economists and policymakers traditionally have, suggests that economic welfare entails a trade-off with environmental quality.
4. If economic welfare can be enhanced in the absence of growth, we can envision economies and environmental quality benefiting mutually.