

1 Chapter 2

Environmental Economics and Environmental Policy

2 This lecture will help you understand:

- Principles of economic theory
- Economic growth, economic health, and sustainability
- Environmental and ecological economics
- Environmental policy
- The history of U.S. environmental policy
- The environmental policy process
- Different approaches to policy
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3 San Diego and Tijuana

- The Tijuana River empties into the Pacific Ocean, carrying millions of gallons of untreated wastewater.
- San Diego's waters receive storm water runoff.
 - Beaches are off-limits to swimming due to pollution from the Tijuana River.
- Rains wash pollutants onto U.S. and Mexican beaches, but things are worse on the Mexican side.
 - The problem has grown worse with increased population and pollution.
- People on both sides of the border have pressed policymakers to do something.

4 Economics

- Economic and environmental concerns are intimately linked.
 - Environmental protection is good for the economy.
- Economics studies how people use resources to provide goods and services in the face of demand.
- Most environmental and economic problems are linked.
- Root "*oikos*" gave rise to both *ecology* and *economics*.








5 Types of modern economies








- Economy: a social system that converts resources into...
 - Goods: manufactured materials that are bought, and
 - Services: work done for others as a form of business
- Subsistence economy: people get their daily needs directly from nature; they do not purchase or trade
- Capitalist market economy: buyers and sellers interact to determine production and distribution of goods and services
- Centrally planned economy: the government determines how to allocate resources
- Mixed economy: governments intervene to some extent







6 Mixed economies









- Mixed economy: a hybrid economic system that combines capitalist market and centrally planned economies
- In modern mixed economies, governments intervene to:
 - Eliminate unfair advantages held by single buyers or sellers
 - Provide social services (national defense, medical care, education)
 - Provide "safety nets" for the elderly, victims of natural disasters
 - Manage the commons
 - Mitigate pollution
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7 The environment and economy are linked

- Economies receive inputs from the environment.
 - Process them for use
 - Discharge the wastes back into the environment
- Traditional economists ignore the environment.
 - Environmental economists accept that human economies exist within, and depend on, the environment.
- 8  **Ecosystem services have non-market values**
 - Non-market values = values not included in the price of a good or service
- 9  **Environmental policy**
 - People persuade government leaders to solve a problem through the making of policy.
 - Policy: a formal set of general plans and principles to address problems and guide decisions
 - Public policy: policy made by governments that consists of laws, regulations, orders, incentives, and practices
 - Environmental policy: pertains to human interactions with the environment
 - Regulates resource use or reduction of pollution
 - Promotes equity in resource use
- 10  **Environmental policy and resource use**
 - Policies include science, ethics, and economics.
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- 11  **Environmental policy and equity**
 - The capitalist market economic systems of democracies are driven by incentives for short-term economic gain.
 - Not for long-term social and environmental stability
 - Provides little incentive to minimize environmental impacts
- 12  **Environmental policy and resource use**
 - Environmental policies exist to protect resources from:
 - (1) The tragedy of the commons: we must develop policies for commonly held resources
 - Restrict use and actively manage resources
 - Safeguard against exploitation and depletion
 - (2) Free riders: reducing environmental impacts tempts any one person to cheat
 - Private voluntary efforts are less effective than efforts mandated by public policy
 - (3) External costs: environmental policies promote fairness by preventing people from using resources in ways that harm others
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- 13  **U.S. environmental policy**
 - The U.S. provides a good example of environmental policies.
 - The U.S. has pioneered innovative environmental policy.
 - U.S. policies have served as role models — of success and failure for other nations.
 - The U.S. influences other nations.
 - Understanding U.S. environmental policy helps us understand environmental policy at local, state, and international levels.
- 14  **Framework of U.S. policy: 3 branches**
 - 3 branches of the U.S. federal government (legislative, executive, and judicial) are involved in aspects of environmental policy:
 - Legislation (statutory law) is passed by Congress
 - Signed or vetoed by the president
 - Implemented and enforced by administrative agencies within the executive branch
 - Administrative agencies: the “fourth branch”
 - Established by the president or Congress
 - Monitors compliance and enforces law
 - Issue regulations: specific rules based on statutory law

- 15  **State and local governments mirror federal policies**
- The structure of the federal government is mirrored at the state level.
 - State laws cannot violate principles of the U.S. Constitution.
 - If laws conflict, federal laws take precedence.
 - California, New York, and Massachusetts have strong environmental laws and well-funded environmental agencies.
 - The interior western states put less priority on environmental protection.
- 16  **Early U.S. environmental policy**
- Involved management of public lands (1780s to the late 1800s)
 - Promoted settlement in the west
 - Extraction of natural resources
 - Increased prosperity
 - Relieved crowding in Eastern cities
 - Displaced millions of Native Americans
 - People believed that land was infinite and inexhaustible.
- 17  **The second wave of U.S. policy**
- During the late 1800s: addressed environmental problems/impacts caused by westward expansion
 - Public perception and government policy shifted.
 - Yellowstone National Park, the world's first national park, opened in 1872.
 - Other protected areas were created.
 - National wildlife refuges, parks, and forests
 - Reflected a new understanding that the West's resources were exhaustible and required legal protection
 - Soil conservation after the 1930s Dust Bowl
 - 1964's Wilderness Act: "where man is but a visitor"
- 18  **The third wave of U. S. environmental policy**
- Responded to pollution
 - Mid-to-late 20th century
 - Better off economically
 - But dirtier air, dirtier water, waste, and toxic chemicals
 - Increased awareness of environmental problems shifted public priorities and policy.
 - 1962: *Silent Spring* (by Rachel Carson) described the negative ecological and health effects of pesticides and industrial chemicals
- 19  **Modern U.S. environmental policy**
- The Cuyahoga River (in Ohio) was polluted with oil and industrial waste.
 - It caught fire in the 1950s and 1960s.
 - Today, public enthusiasm for environmental protection remains strong.
 - The majority of Americans favor environmental protection.
 - Each April, millions of people celebrate Earth Day.
- 20  **National Environmental Policy Act (NEPA)**
- 1970: The dawn of the modern era of environmental policy
 - The National Environmental Policy Act (1970) (NEPA), signed into law by President Nixon:
 - Created the Council on Environmental Quality
 - Requires an Environmental Impact Statement (EIS) for any Federal action that might impact the environment
 - NEPA forces the government and businesses to evaluate the environmental impacts of a project.
- 21  **The EPA shifts environmental policy**
- In 1970, Nixon created the Environmental Protection Agency (EPA) by Executive Order.
 - An integrated approach to environmental policy

- Conducts and evaluates research
 - Monitors environmental quality
 - Sets and enforces standards for pollution levels
 - Assists states in meeting standards and goals
 - Educates the public
 - Involves water and air quality, pollution, solid waste
- 22  **Significant environmental laws**
- The public demanded a cleaner environment and supported tougher environmental legislation.
- 23  **The social context for policy can change**
- Three factors allowed major advances in environmental policy in the 1960s and 1970s:
 - Wide evidence of environmental problems
 - People could visualize policies to deal with problems
 - Public support and leaders who were willing to act
 - Starting in the 1980s, the political climate changed.
 - People felt burdened by environmental regulations.
 - Politicians tried to roll back or weaken environmental laws.
 - The U.S. retreated from its leadership role in environmental policy.
- 24  **The fourth wave of environmental policy**
- The 1992 Earth Summit in Rio de Janeiro, Brazil, drew leaders from 179 nations.
 - It centered on the idea of sustainable development.
 - This fourth wave of environmental policy focuses on sustainable development.
 - Finding ways to safeguard natural systems while raising living standards for the world's poorest people
- 25  **International Environmental Policy**
- International law is vital to solving international problems.
 - Customary law: arises practices or customs held by most cultures
 - Conventional law: arises from conventions or treaties between nations
 - Montreal Protocol (1987): 160 nations agreed to reduce ozone-depleting chemicals
- 26  **Organizations help shape international policy**
- International organizations influence the behavior of nations.
 - Provide funding, apply peer pressure, direct media attention
 - United Nations: created in 1945 to maintain international peace and prosperity
 - United Nations Environment Programme (UNEP): helps nations understand and solve environmental problems
 - The World Bank: established in 1944; one of the world's largest funding sources for economic development
 - Dams, irrigation, infrastructure
 - Funds unsustainable, environmentally damaging projects
- 27  **The European Union (EU)**
- The European Union seeks to promote Europe's unity and economic and social progress
 - One of its goals is promotion of solutions to environmental problems.
 - Contained 27 member nations
 - Can enact binding treaties
 - Its regulations have the same authority as national laws.
 - Can also issue advisory directives
- 28  **The World Trade Organization (WTO)**
- Established in 1995
 - Represents multinational corporations to promote free trade
 - Has authority to impose penalties on nations that don't comply with its directives
 - Interprets some environmental laws as unfair barriers to free trade

- Brazil and Venezuela filed a complaint against the U.S.'s EPA regulations requiring cleaner-burning fuel.
 - The WTO agreed with Brazil and Venezuela, despite threats to human health.
 - Critics charge the WTO aggravates environmental problems.
- 29  **International treaties can discourage protection**
- International treaties allow industries and corporations to weaken environmental protection laws.
 - These laws are seen as barriers to trade.
 - Under the North American Free Trade Agreement (NAFTA), an investor of one country can sue another country for hindering the investor's ability to make profits.
 - i.e., Canada's cattle industry demanded \$300 million from U.S. taxpayers for banning Canadian beef after mad cow disease was found in Canadian cattle
 - With billions of dollars at stake, these treaties discourage states and nations from passing new environmental protection laws.
- 30  **Non-governmental Organizations (NGOs)**
- Non-governmental Organizations (NGOs): entities that influence international policy
 - Some do not get politically involved, such as The Nature Conservancy.
 - Others try to shape policy through research, lobbying, or protest.
 - Greenpeace, Population Connection
 - They apply more funding, research, and expertise toward solving environmental problems than many national governments.
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- 31  **Six steps to making environmental policy**
Identify the problem: requires curiosity, observation, awareness
- 32  **Six steps to making environmental policy**
Envision a solution and set goals: involves science, social and political action
- 33  **Six steps to making environmental policy**
Manage development of policy: Prepare a bill, or draft a law, containing solutions
- 34  **How a bill becomes law**
- After a law's enactment:
 - Administrative agencies implement regulations.
 - Policymakers evaluate the policy's successes or failures.
 - The judicial branch interprets the law.
- 35  **Science plays a role in policy**
- Science provides information to make better policy.
 - A nation's strength depends on its commitment to science.
 - Sometimes policymakers distort science.
 - Manipulating data
 - Censoring, suppressing, and editing reports
 - Placing unqualified people in powerful positions
 - Placing people with conflicts of interest in positions
 - Ignoring scientific advice
 - Misleading the public
- 36  **Approaches to environmental policy**
- Command-and-control approach: environmental policy sets legal limits and threatens punishment for violators
 - Has resulted in successes: cleaner air and water
 - Most current environmental laws
 - Have resulted in safe, healthy, comfortable lives
 - Top-down, sometimes heavy-handed
 - Interest groups — people seeking private gain — unduly influence politicians.
 - Alternative approaches involve using creative economic incentives.

- 37  **Subsidies are widespread**
- Taxbreak: the government relieves the tax burden on a business or individual to promote desirable industries or activities
 - Subsidy: a government giveaway of cash or resources to promote environmentally sustainable activities
 - Can be used to support unsustainable activities
 - i.e., subsidies for non-renewable fuels, roads in national forests, mining on public lands
- 38  **Green taxes discourage undesirable activities**
- Taxation can be used to discourage undesirable activities
 - Internalizes external costs
 - Green taxes: taxes on environmentally harmful activities and products
 - Polluter pays principle: the price of a good or service includes all costs, including environmental degradation
 - Gives companies financial incentives to reduce pollution
 - But, costs are passed on to consumers
- 39  **Market permitting and incentives**
- Markets in permits can save money and produce results
 - Permit trading: the government creates a market in permits for an environmentally harmful activity
 - Companies, utilities, and industries buy, sell, and trade rights to conduct the activity
 - Cap-and-trade system: the government sets the amount of allowable pollution and issues permits to polluters to emit a certain fraction of that amount
 - Polluters can exchange these permits
 - Governments can reduce the amount of emissions
- 40  **Ecolabeling empowers consumers**
- Another strategy that uses the market to counteract market failure
 - Ecolabeling: tells consumers which brands use sustainable processes
 - A powerful incentive for businesses to switch to better processes
 - "Dolphin safe" tuna
 - Socially responsible investing in sustainable companies
- 41  **Conclusion**
- Environmental policy is a problem-solving tool.
 - It uses science, ethics, and economics.
 - It requires an understanding of the political process.
 - Conventional command-and-control approach
 - Uses legislation and regulations
 - Innovative environmental policy tools have been developed
 - Economic welfare does not require a trade-off with environmental quality.