

Economics, Environment, and Sustainability

Economic Systems Are Supported by Three Types of Resources

- **Economic systems** are supported by
 - **Natural capital**
 - **Human capital, human resources**
 - **Manufactured capital, manufactured resources**
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Market Economic Systems Depend on Interactions between Buyers and Sellers

- **Supply, demand, and market price equilibrium point**
 - Benefits of an economy with
 - Private ownership of all resources
 - No governmental interference
 - Opposition to such an economy
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Governments Intervene to Help Correct Market Failures

- **Private goods**
 - **Public services**
 - Reasons for government intervention in the marketplace
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How Can We Put Values on Natural Capital, Pollution Control, Resource Use?

- **Concept A** *Economists have developed several ways to estimate the present and future values of a resource or ecological service and optimum levels of pollution control and resource use.*
 - **Concept B** *Comparing the likely costs and benefits of an environmental action is useful but involves many uncertainties.*
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Taking into Account the Monetary Value of Natural Capital

- Estimating the values of the earth's natural capital
 - Estimate **nonuse values**
 - **Existence value**
 - **Aesthetic value**
 - **Bequest (legacy) value, option value**
 - Estimating these types of monetary values
 - **Mitigation cost**
 - **Willingness to pay**
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Estimating the Future Value of a Resource Is Controversial

- **Discount rates**
 - Proponents (followers) of a high discount rate
 - Critics of a high discount
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We Can Estimate Optimum Levels of Pollution Control and Resource Use

- Relationship between
 - Marginal benefit of resource use
 - Marginal cost of resource production

$$\text{Marginal Costs} = \frac{\text{Change in Total Cost}}{\text{Change in Total Output}}$$

- Optimum level of resource use
 - Optimum level for pollution cleanup
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Cost-Benefit Analysis Is a Useful but Crude Tool

- **Cost-benefit analysis** follows guidelines
 - Use uniform standards
 - State all assumptions used
 - Include estimates of the ecological services
 - How reliable is the data?
 - Estimate short-and long-term benefits and costs
 - What are alternatives?
 - Summarize range of estimated costs and benefits
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How Can We Use Economic Tools to Deal with Environmental Problems? (1)

- **Concept C** *Using resources more sustainably will require including the harmful environmental and health costs of resource use in the market prices of goods and services (full-cost pricing).*
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How Can We Use Economic Tools to Deal with Environmental Problems?

- **Concept D** *Governments can help to improve and sustain environmental quality by subsidizing environmentally beneficial activities and taxing pollution and waste instead of wages and profits.*
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Most Things Cost a Lot More Than You Think

- **Market price, direct price**
 - **Indirect, external, or hidden costs**
 - Direct and indirect costs of a car
 - Should indirect costs be part of the price of goods?
 - Economists differ in their opinions
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We Can Include Harmful Environmental Costs in the Prices of Goods, Services

- **Environmentally honest market system**
 - Why isn't full-cost pricing more widely used?
 - Government action to phase in such a system
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Environmentally Informed Consumers Can Vote with Their Wallets

- **Product eco-labeling**
 - **Certification programs**
 - The U.S. Green Seal labeling program
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We Can Reward Environmentally Sustainable Businesses

- Phase out environmentally harmful subsidies and tax breaks
 - Phase in environmentally beneficial subsidies and tax breaks for pollution prevention
 - Pros and cons
 - Subsidy shifts
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We Can Tax Pollution and Wastes instead of Wages and Profits

- **Green taxes, ecotaxes**
 - Steps for successful implementation of green taxes
 - Success stories in Europe
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Environmental Laws and Regulations Can Discourage or Encourage Innovation

- **Regulation**
 - **Command and control** approach
 - **Incentive-based regulations**
 - **Innovation-friendly regulations**
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We Can Use the Marketplace to Reduce Pollution and Resource Waste

- Incentive-based regulation example
 - Cap-and-trade approach used to reduce SO₂ emissions
 - Advantages
 - Disadvantages
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How Can Reducing Poverty Help Us to Deal with Environmental Problems?

- **Concept E** *Reducing poverty can help us to reduce population growth, resource use, and environmental degradation.*
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5 Making the Transition to More Environmentally Sustainable Economics

- **Concept F** *We can use the four principles of sustainability and various economic and environmental strategies to develop more environmentally sustainable economies.*
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We Can Make Money and Create Jobs by Shifting to an Eco-Economy

- Hawken, Brown, and other environmental business leaders
 - Transition to environmentally sustainable economies
 - Some companies will disappear
 - New jobs will be created
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