

**Solution Manual for Environmental Science Toward a Sustainable Future**  
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**CHAPTER 2**  
**Economics, Politics, and Public Policy**

**Chapter Outline:**

- I. Economics and the Environment
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  - B. Economic Systems
    - 1. The Rulers Decide
    - 2. The Market Decides
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  - C. International Trade and the World Trade Organization
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- II. Resources in a Sustainable Economy
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  - B. New Work by the World Bank
  - C. Measuring True Economic Progress
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    - 3. Implementation Stage

- 4. Control Stage
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  - E. Progress
- V. Politics and the Environment
- A. Political Parties and the Battle for Control
    - 1. Special Interest Politics
    - 2. The Presidential Picture
  - B. Mid-Term Blues
  - C. Citizen Involvement

### **Key Topics:**

1. Economics and the Environment: Describe how economic activity relates to environmental goods and services, and differentiate between green and brown economies.
2. Resources in a Sustainable Economy: Summarize the components of wealth a nation draws on to establish and maintain an economy, and identify new efforts to measure true economic progress.
3. Environmental Public Policy: Explain the kinds of policies employed to regulate the use of natural resources and deal with pollution, and describe a typical policy life cycle.
4. Benefit-Cost Analysis of Environmental Public Policy: Discuss how benefit-cost analysis is applied to environmental policy regulations, and give examples of the impact of regulations.
5. Politics and the Environment: Assess the role played by partisan politics in recent environmental public policy.

### **Instructional Goals:**

1. Public policy governs society's interactions with the environment through laws and regulations. These laws and regulations are created by the interactions between the business community, nongovernmental organizations, and the three branches of our government—executive, judicial, and legislative.
2. A nation's wealth is dependent upon produced assets, natural capital, and human resources. Natural capital is the goods and services supplied by ecosystems and the mineral resources in the ground. The natural capital used by a nation is not restricted to the goods, services, and mineral resources found within the nation's borders.
3. Public policy development has a life cycle consisting of four stages: recognition, formulation, implementation, and control.
4. The job versus environment dichotomy is false. A sound economic system is dependent upon a healthy environment. Environmental public policy transfers wealth from polluters to those who control or do not create pollution.
5. Environmental public policy has created a cleaner, healthier, and more enjoyable environment.
6. Society decides how policies are made. In the United States the prevailing decision-making tool is risk-based decision making. This process allows activities until they are proven to be harmful. Many European countries have changed from risk-based decision making to the use of the precautionary principle (if a substance or action

has a reasonable probability of causing harm, the lack of scientific data to substantiate the existence of harm can be used as a reason for lack of action). The choice of decision-making tools belongs to the public.

### **Concepts and Connections:**

All environmental issues function within an economic context. The economy is dependent on the goods and services provided by ecosystems. Minerals and energy are obtained from the environment. To have a sustainable economy the manner in which we use the resources from the environment must be sustainable. When short-term economic decisions leave environmental considerations as externalities, tremendous damage can be done.

There have been many controversies in recent years pitting jobs against the environment. The spotted owl was cited as the reason for the loss of logging jobs, but job loss due to consolidation, non-sustainable logging practices, and shipments of logs out of the country can be documented as the predominant reasons. Recent news concerning the listing of several more salmon species has produced a very different reaction among the residents. There is a tremendous amount of support in the Seattle region for the changes that will be necessary to insure the survival of the native salmon populations. It seems that a possible explanation for this difference is that the people of this region identify with the salmon.

Making connections between a healthy economy and a healthy environment is essential. Links can be made between the services provided by nature—for example, water filtration, groundwater recharge, and atmospheric cleansing—and the amount of money it would cost if we attempted to replace these services. To have a healthy economy we depend on goods from nature, for example, trees, energy, and food. While it is not hard to demonstrate that a healthy economy is dependent on healthy ecosystems, resistance to this idea is common as this recognition complicates our actions. If we cannot ignore nature, life is a bit less simple.

### **Concepts in Context:**

Everything discussed in the textbook has economic implications. Specific discussions in the text include the value of ecosystem goods and services (Chapter 5), biodiversity (Chapter 6), and common property resources (Chapter 12) and the cost to control air pollution (Chapter 22). Human demographic transition (Chapter 8) was discussed as being influenced by economic growth and the reasons for choosing a particular family size (Chapter 9) included the cost to raise children and old-age support.

The remaining topics discussed during the semester can also be linked to economics. The biogeochemical (Chapter 3) and the hydrological (Chapter 10) cycles provide substantial economic services by moving matter. Agriculture (Chapter 12) would not be able to exist without the soil and soil ecosystem (Chapter 11), the hydrological cycle (Chapter 10), and ecosystem goods and services (Chapter 7). Agriculture is affected by pests (Chapter 13), water pollution (Chapter 20), and air pollution (Chapter 19). How we obtain energy and the availability of energy (Chapters 14, 15, and 16) are critical to a healthy economy. Climate regulation (Chapter 18) is a service received from the natural environment that has tremendous influence on the economy and on our ability to grow food.

Adverse human health (Chapter 17) impacts from air pollution (Chapter 19), hazardous waste (Chapter 22), and water pollution (Chapter 20) cost money. Poor use of resources (Chapter 21) costs money.

### **Key Terms and Vocabulary:**

Economics, economy, economic systems, centrally planned economy, free market or capitalist economy, land, labor, capital, state capitalism, Doha Development Round, ecological economists, economic production, ecosystem capital, produced capital, natural capital, intangible capital, human capital, social capital, knowledge assets, Genuine Progress Indicator (GPI), discount rate, legislative branch, executive branch, judicial branch, Payments for Ecosystem Services (PES), effectiveness, efficiency, equity, benefit-cost analysis, external cost, Regulatory Right to Know Act

### **Discussion, Activities, and Labs:**

1. Ask the students to list as many examples as they can of situations where saving (not destroying) the environment is seen as hindrance to the economy. Once the list has been created, challenge the students to think of situations where pitting jobs against the environment would not be a productive way to address the problem.

(For example, the attempt to preserve habitat for the spotted owl has been seen by many loggers as an attack on their livelihood. Many economic studies of these areas have indicated that logging was on the decline due to other economic pressures such as exporting and overharvesting, and preserving habitat for the spotted owl had little to no effect on the local economy. It can be argued that tourism dollars from an intact habitat will be greater than the dollars brought into the area by logging.)

2. Ask students to list as many external costs as possible. Listing specific examples will help students understand this concept and how it is detrimental to reducing human impact on the environment. For example, have the students list all the externalities involved in using the automobile rather than mass transit, bicycles or walking for transportation, or using trucks rather than trains for the movement of goods. Listing all the externalities involved in manufacturing, using, and disposing of a computer could also be an interesting exercise. The same kind of list could be created for the production of food.
3. Have each student search the newspaper for articles linking the economy and the environment. Encourage the students to find as many articles as possible on as many topics as possible. There are at least one or two articles per day on the environment in most major daily papers. With very little imagination it is possible to find an economic link for each article. Ask the students to summarize the information they find. Do the articles pit the environment against the economy?

## Suggested Lecture Format

### I. Economics and the Environment

- A. Relationships between Economic Development and the Environment  
A healthy economy needs a healthy environment. **See Discussion Topic #1.**
- B. Economic Systems: Discuss the two main types of economic systems and the difference between planned economies and free market economies.
- C. International Trade and the World Trade Organization: What is the WTO? Why is it so controversial?
- D. The Need for a Sustainable Economy: Discuss what a healthy society would look like. How can we achieve one?

### II. Resources in a Sustainable Society

- A. Measuring the Wealth of Nations
  1. Produced capital—"human-made buildings and structures, machinery and equipment, vehicles and ships, monetary savings and stocks, highways and power lines, and so forth."
  2. Natural capital—nations may obtain this type of capital from within a country or from outside the country.
    - i. Human resources include human capital, social capital, and knowledge capital.
  3. Intangible capital—Discuss the three types of intangible capital and their importance
- B. New Work by the World Bank: Reference Table 2-1.
- C. Measuring True Economic Progress: Corrections to the GDP for depreciation of natural capital are necessary.
  1. Natural Capital Depreciation
  2. Genuine Progress Indicator (GPI)
  3. Environmental Accounting
- D. Resource Distribution: We will continue to face generational inequity in resources, along with disparities between and within nations.
  1. Essential Conditions
  2. Intergenerational Equity
  - 3.

### III. Environmental Public Policy

- A. The Need for Environmental Public Policy: There are repercussions for poor or no environmental policy. Discuss the topics in Table 2-2.
- B. Policy in the United States—Discuss the rules and regulations at both the state and local levels.
- C. Policy Options: Market or Regulatory? Each option has its benefits and disadvantages. Discuss each with the students.
- D. Public Policy Development: The Policy Life Cycle (pesticides are used as example in the text; could bring the example back around to the recognition stage by looking at FQPA; could also look at endocrine disruptors as an example of a problem that is in the recognition/formulation stage; air pollution could be used as an example of a pollution issue that has moved through all four stages).
  - 1. Recognition Stage
  - 2. Formulation Stage
  - 3. Implementation Stage
  - 4. Control Stage
- E. Economic Effects of Environmental Public Policy
  - 1. Costs of Policies
    - i. Those involving little or no direct monetary cost
    - ii. Those involving costs that must be paid by some segment of society. The cost should be borne by those benefiting from the activity that produces the pollution.
  - 2. Impact on the Economy
    - i. An economy stimulant
    - ii. Creates jobs
    - iii. Transfers wealth from polluters to pollution controllers and to less polluting companies

### IV. Benefit-Cost Analysis of Environmental Public Policy

- A. External Costs— “some effect of a business process that is not included in the usual calculations of profit and loss”.
- B. Environmental Regulations Impose Real Costs—The real goal is to find optimum cost-effectiveness in environmental policy. See Figures 2-13 and 2-14.
- C. The Benefits of Environmental Regulation—Environmental costs are much easier to calculate than benefits. Discuss Figure 2-15 and Table 2-3.
- D. Cost-Effectiveness Analysis: The merits of the goal are not necessarily known or accepted. In a cost-benefit analysis the attempt is to determine if the action is worth the cost. Discuss how External costs figure into the equation. **See Discussion Topic #2**
- E. Progress
  - 1. The merits of the goal are accepted. In a cost-effectiveness analysis the attempt is to find the least costly way to achieve the goal.

### V. Politics and the Environment

- A. Political Parties and the Battle for Control
  - 1. How do political parties present their environmental view in contrast to how they portray the “other side”?
  - 2. Special-interest Politics
  - 3. The Presidential Picture

- i. How did the Bush administration “redirect” the environmental movement?
  - ii. How has the Obama administration changed what was done during the Bush era?
- B. Mid-Term Blues: Partisan struggles can prevent environmental health. **See Discussion Topic #3**
- C. Citizen Involvement
  - 1. What students can do to help the “cause”
    - i. Local involvement
    - ii. Work with NGOs
    - iii. Work for a pro-environment candidate
    - iv. Learn how to stay informed and distinguish between biased and unbiased information.

## Review Questions: Possible Answers

### 1. *What is happening these days in the Chinese economy and environment?*

The country of China has been experiencing both the benefits and problems of a growing economy. The Chinese economy has doubled in the last decade. It is difficult to avoid the “made in China” label. The Chinese people have a growing middle class with higher literacy, cars, electronics, and all the other material goods and privileges that go along with that status. On the negative side, their environment has suffered greatly. One of the examples is the toxic air. Sixteen of the world’s most polluted cities are in China—not a distinction to be proud of. Sulfur dioxide is one of the toxins and many deaths have occurred because of it. Another example is the water pollution that is causing cancers and related to this is the diversion of water for irrigation and other uses. The Three Gorges Dam has displaced millions of people and covered millions of acres of farm land in water. The governmental environmental regulation agency, SEPA, has its hands full and is struggling to keep up. As a result, over 2,000 more local NGOs have been formed in an attempt to slow the pollution down and affect some cleanup activities.

### 2. *Three patterns of environmental indicators are associated with differences in the level of development of a nation. What problems decline, what problems increase and then decline, and what problems increase with the level of development?*

The proportion of the population without safe water or adequate sanitation declines as per capita income increases. The quantity of municipal wastes and carbon dioxide emission increases as the per capita income increases. As the per capita income increases, the concentration of particulate matter and sulfur dioxide increases and then decreases.

### 3. *Name the two basic kinds of economic systems and explain how they differ.*

The two basic kinds of economic systems are centrally planned economies and free-market economies. The two economic systems “differ mostly in how economic decisions are made. In a centrally planned economy, the rulers make all the basic decisions regarding what and how much will be produced where, and by whom.” In a pure free-market economy, the market itself determines what will be exchanged.” The whole system is in private hands and is driven by the desire of people and businesses to acquire goods, services, and wealth as they act in their self-interest.” Neither of the economic systems actually exists as described.

### 4. *What is the role of the World Trade Organization, and how has this role broken down recently?*

The World Trade Organization (WTO) was formed in 1993 because of globalization and economic issues laid out by the GATT (General Agreement on Tariffs and Trade). It is supposed to enforce trade rules between nations, but the wealthy nations have been able to dominate. Its power comes by imposing stiff trade penalties on non-complying countries. They have established a reputation for elevating free trade over substantial human rights and environmental resource concerns. In other words, they are sometimes supporting free trade over fair trade. There are incidences of the WTO supporting the economy over the environment, such as when they ruled against the turtle-safe shrimp law of the U.S. Over the years, outside protests and conflicts between developed and developing countries have brought the talks to a halt without reaching any consensus. One of the issues is that developed countries subsidize their agricultural products and therefore developing countries want to impose tariffs to make their own products more competitive. As a result, the goal of free trade and a global economy is yet to be achieved.

5. *What are some characteristics of a sustainable economy?*

Instead of merely promoting economic growth, a sustainable economy would emphasize improving human well-being. It would value and preserve natural services and goods. It would promote “green” goods and services. Goods would be made more durable, more recyclable, or more reusable. Where possible more recycled materials would be used to produce goods. The production process would be as nonpolluting as possible. Services would try to use nonpolluting techniques such as using biosolids from a waste treatment plant as fertilizer instead of sending them to a landfill. Overall, a sustainable economy would try to protect the environment as well as promote human well-being.

6. *Describe the three components of a nation’s wealth. What insights emerge from the World Bank’s analysis of the wealth of different groups of nations?*

The three components of a nation’s wealth are produced capital, natural capital and intangible capital. Produced capital is the human-made buildings and structures, machinery and equipment, vehicles and ships, monetary savings and stocks, highways and power lines, and so forth that are essential to the production of economic goods and services. Natural capital refers to the goods and services supplied by natural ecosystems and the mineral resources in the ground. Intangible capital is divided into three elements. The first is human capital which refers to the population and its physical, psychological, and cultural attributes. The second element, social capital is the social and political environment that people create for themselves in a society. The third element is knowledge assets, which is the codified or written fund of knowledge that can be readily transferred to others across space and time.

If you refer to Table 2-1, you can see that although natural capital often ranks third in most countries, this does not mean that it is less important than human resources or produced assets. In particular natural capital plays a more important role in low-income countries, as they develop, and become more dependent on their natural resources, than are wealthier countries.

7. *Why is the gross national product an inaccurate indicator of a nation’s economic status? How can it be corrected?*

“The GDP is the GNP minus net income from abroad. The economists who invented GNP as a measuring device years ago, never took into account the depreciation of natural capital—an omission that recently has received a great deal of criticism from ecological economists.” The GPI is a measure of progress proposed by the nonprofit organization *Redefining Progress*. It is calculated by assuming that some kinds of economic activity are positive and sustainable and others are not. Some of these activities are not included in the GDP. Several of the positive factors in the GPI—such as labor involved in running the home and volunteering—are considered positive. Negatives in the GPI include factors like the costs of crime, loss of leisure time, costs of pollution, depletion of nonrenewable resources, and loss of farmland. Even though the GDP may steadily rise, the GPI may not because of rising environmental cost as well as depreciation.

“If the GDP is simply unable to measure true economic progress, some other index is necessary. The nonprofit organization *Redefining Progress* has proposed the Genuine Progress Indicator (GPI) as a measure of economic progress. This index is calculated by assuming that some kinds of economic activity are positive and sustainable and others are not.”

8. *What conditions are necessary for a country to make progress in the development of human resources and produced assets?*

“Perhaps the most important reasons relate to the major institutions that coordinate social and political life and that make up the social capital of a society. For example, the definition of rights, the enforcement of those rights, and the facilitation of economic exchange are all considered essential to the successful development of human capital and produced capital. A well-developed body of law, an honest legal system, inclusiveness, broad civic participation, and a free press are essential for maintaining rights within a society. A well-developed market economy and free entry into and exit from markets for people and business are also conducive to development. Functioning communication and transportation networks and viable financial markets are needed to sustain a market economy. History tells us that if these resources are in place, a society will make progress in the development of human resources and produced assets. In societies where such resources are not in place, corruption, inefficiency, banditry, injustice, and intolerance often prevail; continuing poverty and environmental degradation are the predictable outcome.”

9. *Explain the importance of considering both intragenerational equity and intergenerational equity in addressing resource allocation issues.*

Intragenerational equity is “the golden rule of making possible for others what is possible for you.” If others have the same social awareness the amount of environmental degradation will be less.

Intergeneration equity is about “meeting the needs of the present without compromising the ability of future generations to meet their needs.” This is also the definition of sustainability. Intergenerational equity will help us reduce environmental degradation without compromising our own needs.

10. *What is the overall objective of environmental public policy and what are the objective's two most central concerns?*

The objective of environmental public policy is to promote the common good. While it may be difficult to define the common good, the two most central concerns are the improvement of human welfare and the protection of the natural world. Because of this, environmental public policy addresses two sets of environmental issues: One is the prevention or reduction of all types of pollution, and the other is the use of both renewable and nonrenewable natural resources.

11. *Describe the various bodies responsible for environmental public policy at the federal, state, and local levels. On the federal level, Congress enacts environmental public policy legislation which the president signs into law. The laws are implemented and enforced by various agencies like the EPA, BLM, Fisheries and Wildlife and others. These agencies also write rules and regulations and otherwise flesh out the laws enacted by Congress. All of this also depends on the budget and appropriations proposed by the President and approved by the Congress. The president also nominates the leaders of these agencies. Many must be approved by Congress. Often, the person appointed has a major say in the direction and views the agency will take.*

On the state level, states can enact stricter laws than the federal government. For example, Michigan has tougher wetland laws concerning their use. States also have their own hunting, fishing, and trapping regulations as well as forestry laws about activities such as moving firewood. States also have their own state parks, wildlife refuge and forest systems.

On the local level cities and counties can affect public policy with conservation commissions, planning boards, health boards, water and sewer commissions, and other such agencies and boards. They can set up recycling, hazardous waste collections, green spaces, bike trails and other environmental friendly infrastructure.

12. *What are the advantages and disadvantages of the regulatory approach versus a market approach to policy development?*

Regulatory approach allows for the setting of health-based standards to “protect the health of the most vulnerable members of the population.” The regulatory approach also works well with land use issues in which certain values are upheld that will not necessarily be protected by a straightforward market approach. One of the shortcomings of the regulatory approach is that it practically guarantees a certain sustained level of pollution...the policy gives the polluter no incentive to invest in technologies that would keep pollution at lower levels than allowed. A better approach might be to set a standard for air quality or water quality, for example and let the polluter decide how best to achieve the standard. Here there is a command, but control is in the hands of the polluter.”

“Market-based policies have the virtues of simplicity, efficiency, and (theoretically) equity. All polluters are treated equally and will choose their responses on the basis of economic principles having to do with profitability.” Basically, this is the pay as you pollute principle. If it costs less to be environmentally friendly, or if you will sell more products that way, then the company will chose to do so.

13. *List four stages of the policy life cycle, and show how the discovery of ozone layer destruction and the subsequent responses to it illustrate the cycle.*

The typical life cycle of environmental public policy development has four stages. The stages are recognition, formulation, implementation, and control. **Recognition** is the process through which the early perceptions of an environmental problem occur and a great deal of dissension exists. CFCs were considered miracle chemicals, useful for many processes and seemingly harmless, inert, and nontoxic. That was until two scientists decided to investigate what happens to CFCs in the atmosphere. When they published their theory that CFCs would destroy the ozone they were treated like pariahs and even Russian spies! No one wanted to believe



that CFCs were harmful. **Formulation** is the stage where the political weight of those who perceive a problem is increasing. “The public is now aroused, and debate about policy options occurs in the corridors of power.” Those that make the policies have listed what may be called the “Three E’s” of environmental public policy: effectiveness, efficiency and equity. During this stage, the National Academy of Sciences confirmed the findings of these scientists and CFCs were subsequently banned from aerosol cans. On the international level, the Montreal Protocol was written and required cutting CFC production in half by the year 2000. The process had begun. The **implementation** stage is where “...real political and economic costs are exacted. The policy has been determined, and the focal point moves to regulatory agencies.” Companies began developing more benign substitutes for the CFCs while using less CFCs in their processes, refrigerators, and air conditioners. **The control** stage is the final stage. “...Years have passed since the early days of the recognition stage. Problems are rarely completely resolved, but the environment is improving, with things moving in the right direction.” The ozone hole appears to be decreasing in size with less CFCs in the atmosphere. CFCs are no longer being manufactured.

14. *What is the conclusion of careful studies regarding the relationship between environmental policies, on the one hand, and jobs and the economy, on the other?*

“Estimated pollution control costs are only 1.72% of value added.” Only 0.1% of job layoffs were attributed by employers to environment-related causes, according to a study by the U.S. Bureau of Labor Statistics. ...States with the strictest environmental regulations also had the highest rates of job growth and economic performance.”

15. *Define the term benefit-cost analysis as it relates to environmental regulation. How does this analysis method address external costs? Distinguish it from cost-effectiveness analysis.*

“A **benefit-cost analysis** begins by examining the need for the proposed regulation and then describes a range of alternative approaches. Afterward, it compares the estimated costs of the proposed action and the main alternatives to the benefits that will be achieved. All costs and benefits are given monetary values (where possible) and compared by means of what is commonly referred to as a *benefit-cost* (or *cost-benefit*) *ratio*. A favorable ratio for an action means that the benefits outweigh the costs, and the action is said to be cost effective....”

“By including *all* of the costs and benefits of a project or a regulation, benefit-cost analysis effectively brings the externalities into the economic accounting. One suggestion for accomplishing this is the use of green fees or taxes.” This is how benefit-cost analysis can include external costs like pollution, poor health of employees or other negative aspects of doing business. “Cost-effectiveness analysis is an alternative option for evaluating the costs of regulations. Here the merits of the goal are accepted, and the question is: How can that goal be achieved at the least cost? To find out, alternative strategies for reaching the goal are analyzed for costs, and the least costly method is adopted.”

16. *Discuss the cost-effectiveness of pollution control. How much progress have we made in pollution control in recent years?*

Cost-effectiveness can be applied to the desired level of pollution control. As Figure 2-13 shows, a significant benefit may be achieved by modest degrees of cleanup. Note, however, how differently the cost and benefit curves behave with increasing reduction of pollution. At some point in the cleanup effort, the lines cross, and the costs exceed the benefits. Few additional benefits are realized when cleanup begins to approach 100%, yet costs increase exponentially. This behavior follows from the fact that living organisms—including humans—can often tolerate a threshold level of pollution without ill effect. Therefore, reducing the level of a pollutant below its threshold level will not yield an observable improvement. Optimum cost-effectiveness that meets the efficiency criterion for public policy is achieved at the point where the benefit curve is the greatest distance above the cost curve. However, the perspective of time should be considered in calculating cost-effectiveness (Figure 2-14c). A situation that appears to be cost ineffective in the short term may prove extremely cost effective in the long term. This is particularly true for problems such as acid deposition and groundwater contamination from toxic wastes.

What has been the result of environmental regulation to date? Pollution of air and surface water reached critical levels in many areas of the United States in the late 1960s, and since that time, huge sums of money have been spent on pollution abatement. Benefit-cost analysis shows that, overall, these expenditures have paid for themselves many times over in decreased health care costs and enhanced environmental quality. Consider the phasing out of leaded gasoline as just one example. The project cost about \$3.6 billion, according to an EPA benefit-cost report. Benefits were valued at over \$50 billion, \$42 billion of which were for medical costs that were avoided!

17. *How has the political arena affected environmental public policy in the last few years? What has been the role of special-interest groups? Political parties? Presidents?*

“The 104th Congress (1995–1996) began with an effort to dismantle many key laws, especially the Clean Water Act, the Clean Air Act, and Superfund. When it became apparent what was happening, heavy grassroots work by many environmental organizations and extensive media coverage made it clear that the public did not support this anti-environmental thrust. As a result, most of the anti-environmental legislation died in the Senate or was vetoed by President Clinton. The more recent Congress saw some of the same anti-environmental forces attempting once more to get their legislation through. However, a bipartisan coalition was able to hold off new attempts to weaken environmental laws. One effect of these battles was a failure to reauthorize a number of important laws, such as the Endangered Species Act and Superfund. The laws continued in force nevertheless. The role and power of special interest groups became evident during these struggles. In the 1970s and 1980s, special interests (such as the coal industry and the fisheries industry) would hire lobbyists who would use their influence to try to convince congressional committee members to act in their favor on issues that were important to them. Environmental NGOs would then use the media to expose the issues to the public and call on their constituencies to telephone and send mail to their representatives in Congress. The anti-environmental interests caught on to the NGO strategy and began to mimic what they were doing, but more effectively because they had deeper pockets. Soon a constant battle between special interest groups emerged in which each would use the media and telephone calls (enhanced by phone banks, which can generate thousands of calls to legislators in a short period) to pressure members of Congress. Added to this picture was the massive explosion in campaign contributions, largely from businesses and industry. What all this means is that environmental concerns are often a battle of special interest groups—that environmental protection is seen as one among many interests in American politics.”

### **Thinking Environmentally: Possible Answers**

1. *Consider the ultimate impact that environmental law has on the economy. Do short-term drawbacks justify long-term goals? If there is a conflict, which should come first—the economy or the environment?*

Anecdotal evidence may suggest that environmental laws are detrimental to the economy, but studies show the opposite. Economic performance is highest where environmental public policy is most highly developed. If workers are healthier, the physical plant energy is efficient, and resources are conserved, then the company will see a larger profit and be more competitive. Therefore, the wealth is transferred from polluting companies to those that are less polluting. The environment protection industry itself is good for the economy as it employs people for a variety of jobs.

Developing countries, such as China and the U.S. have followed the precedent that the economy should come first, but are paying for it now with bad air, polluted water, and unhealthy conditions. Given the problems these countries are having, it seems clear that the environment should come first.

2. *Research the Doha Round of meetings of the World Trade Organization. Analyze the positions of the developing countries and the industrial countries, and propose a solution that might meet the concerns of both groups.*

The Doha Declaration of 2001 was controversial to say the least. One of the issues was the fear that liberalization of agricultural trade would raise food prices and adversely affect the poorer food-importing countries while benefiting the richer food-exporting countries like the U.S. and the European Union. It is believed that reduced tariffs and subsidies will help raise prices with most of the gains going to these countries and Japan. As Bruce Stokes wrote in the *National Journal*, “The biggest winners among industrial nations would be Japan and the European Union, where incomes stand to grow by \$6.5 billion and \$5.8 billion, respectively.” Among developing nations, the chief beneficiary by far would be China, which would gain \$10.3 billion in annual income, or more than four times the increase expected for India. In fact, China’s expected benefits account for nearly half of those likely to accrue to the developing world. The biggest losers would be Bangladesh, Malawi, Tanzania, and Uganda and the rest of the nations of sub-Saharan Africa (excluding South Africa). The numbers are so small; however, relative to the size of national economies, that the precise figures are less important than the broad picture they paint. Most farmers in poor countries would suffer because they aren’t globally competitive and they wouldn’t be well positioned to take advantage of new market opportunities in Europe and the United States. Moreover, many of the poorest nations now enjoy preferential access to rich-country markets, a benefit that will be eliminated in a new trade deal. Furthermore, since a decline in U.S. and other farm subsidies will lead to global price rises for many commodities, developing countries that are net food

importers could see their food bills rise. “Countries like India, Indonesia, and Kenya will require exceptions for the products produced by their subsistence farmers if they are to avoid increases in poverty.” the Carnegie study concludes. Allowing such countries to exempt their agricultural sector from tariff cuts—a move strongly resisted by American negotiators—would not cost Europe and the United States that much, Polaski contends. And a separate computer model of such a scenario found that India and Vietnam would have slightly greater income gains, while Bangladesh and countries in East Africa would experience less income loss if their subsistence farmers were protected.

(Bruce Stokes, *National Journal*© National Journal Group Inc. Friday, March 17, 2006)

As a result, the industrial countries will benefit from these measures with increased income from agricultural exports and developing countries, with the exception of China, will be harmed in the form of increased food costs and by being less competitive in their food exports. Perhaps a separate subsidy or allowing tariffs in these countries would help equalize the playing field.

On the manufacturing side, the U.S. has little or nothing to gain. However, Mexico has a lot to lose by losing its preferential role created by NAFTA. China will be the big winner on the manufacturing side. The hope is that China will offer the less-developed countries duty-free and quota-free access to its market as the U.S. and European Union have done. If so, maybe the developing countries can afford the goods to help them increase their standard of living and compete industrially in the future. The Carnegie Model as seen in the *National Journal*, however, sees less benefits for developing countries overall. The World Bank Model is a little more optimistic when it comes to these less developed nations, but overall the consensus is that the Doha Agreement has actually made the gap between poor and rich countries wider instead of succeeding in its attempt to narrow the gap. What should be done about this? Scrap the whole initiative? Delay the time tables? Make separate rules for developed and developing countries?

3. *Examine the three types of capital that make up the wealth of nations. Which do you think is the most valuable? Justify your answer.*

There are three types of capital that determine a nation’s wealth. The first is produced capital which is defined as human made items. These items tend to become obsolete. The second is natural capital which is supplied by ecosystems and resources in the ground. These can be either renewable or nonrenewable. The third is intangible capital which includes humans, social capital, and knowledge.

It can be argued that without natural capital (namely resources) a nation cannot build the produced capital—and without produced capital a country may not be able to use its natural resources. However, without adequate intangible capital, a nation does not have the workforce, the knowledge, and the social structure to be able to use the natural resources in an environmentally responsible manner. They also cannot make produced capital which will not become obsolete quickly. Finally, they cannot make capital that is less likely to degrade the environment. Therefore, the best argument would be that intangible capital is the most valuable. Countries can import natural capital and produced goods but they need people with a good social and educational environmental in order to use it.

4. *What different roles do you think the federal and state governments should have in environmental policy?*

Since some problems cross state lines (such as acid rain, water pollution, and ozone depletion), the federal government needs to have a role in environmental policy. Unfortunately, history shows that the administration and political party in power at a particular time has an enormous effect on the way policies are enforced.

Through subsidies, and tariffs the federal government can encourage practices that are not environmentally sound. Ideally, the federal government should have the ability to enact and enforce laws but have a limited ability to change or undermine these laws depending on who or what party is in office, or which corporation or interests have the strongest influence. State governments should have the ability to have stronger policies than the federal government. For example, some states have stricter rules on the uses of wetlands or have bottle laws, however states should not have the ability to usurp or undermine federal policy.

5. *Suppose it was discovered that the bleach that is commonly used for laundry was carcinogenic. Referring to the policy life cycle, describe a predictable course of events until the problem is brought under control.*

**Recognition** would be slow because bleach is a commonly used material and people would be reluctant to give up its use. Eventually, as the number of studies showing the connection between the use of bleach and cancer increased, more people would conclude that something needs to be done.

**Formulation** of policy would begin as the number of people with political power who support change increases. The arguments in Congress would begin and the companies producing bleach would attempt to stop or soften any proposed legislation. Finally, Congress would pass legislation to address the problem.

**Implementation** of the policy created by Congress would begin. It is most likely that the EPA would develop the regulations to implement the law passed by Congress and signed by the president.

**Control** is the final stage where the effects of the policy that was implemented can be seen. Improvements in the cancer rates would be observed as the use of bleach decreased.