

Lecture 17
23 November 2010
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NOTE: I will not cover many of these notes or will do so quickly (because of the Thanksgiving holiday eating up the 2nd day I usually give on environment) but provide them here for you to peruse. I want to try to cover both environmental problems generally and climate change in particular.

- I. Evaluating Regime Effects -- an environmental example and the graphics to go with it.
 - A. Institutions ("regimes") can always be evaluated against TWO definitions of success
 1. #1: "Was goal achieved?" Or "How close did institution come to achieving its goal?"
 - a) Compare actual behavior to **goal**
 2. #2: "Did institution cause behaviors or outcomes different than would have occurred otherwise?"
 - a) Compare actual behavior to **counterfactual**
 - B. Make sure you understand the graphs in the Powerpoints from Lecture 13 at <http://pages.uoregon.edu/rmitchel/ir/lectures/Powerpoints/lecture13.pptx> and the concepts related to it -- several questions about it will be on the final exam.

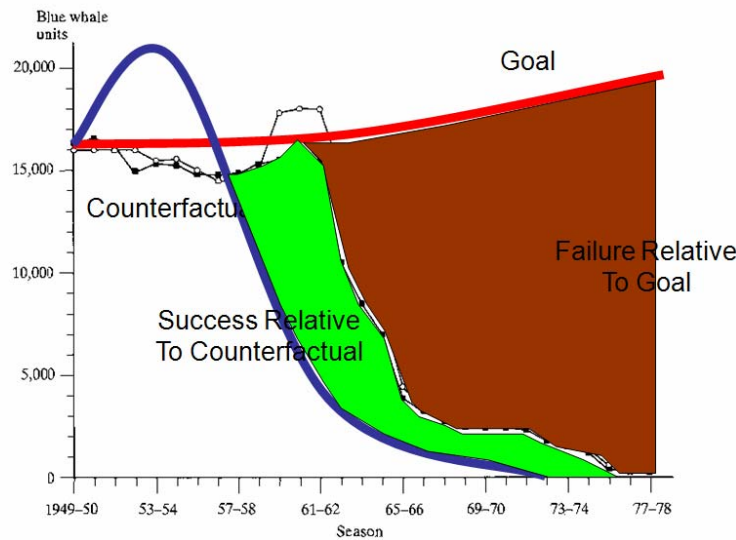


FIGURE 4. Antarctic pelagic quotas and catches, 1949-50 through 1977-78

Note. Quotas for the 1959-60 through 1961-62 seasons were set by governments of states involved in Antarctic pelagic whaling; quotas for other seasons were set by the IWC.
 Source. J. N. Tonnessen and A. O. Johnsen, *The History of Modern Whaling* (Berkeley: University of California Press, 1982), p. 749, Table 65.

- II. Some of the evidence of human impact on the earth - Powerpoint presentation.
- III. The Pollution Identity: Pollution as a function of population, wealth, and pollution intensity

$$\text{Pollution} = \text{Population} * \text{Per capita income (GNP/pop'n)} * \text{Pollution intensity (P/GNP)}$$
 Usually known as "IPAT identity" (environmental Impact = Population * Affluence * Technology)
- IV. Five outlooks:
 - A. Scientific
 1. Problem = lack of knowledge
 - a) About the problem and its causes
 - b) About the potential solutions to the problem
 - c) Problem lies in the research and scientific community's lack of knowledge
 2. Solution = technology and information will allow us to respond and adapt to changes in the environment quickly enough to drive down the pollution intensity factor in the pollution equation.
 Technocratic optimism.

- B. Philosophical/ecological
1. Problem = social values are wrong. People and societies don't value resources we do have appropriately. Deep ecology, GAIA principle, ecofeminism
 2. Basic principles of deep ecology (Arne Naess, Norwegian philosopher, 1973 article)
 - a) All life forms have intrinsic value, independent of use to humans
 - b) Richness and diversity of life forms is also intrinsically valuable
 - c) Humans have no right to reduce diversity except for vital needs
 - d) Human life and culture can flourish with less population and non-human life requires it
 - e) Human alteration of environment is excessive
 - f) Economic, technological, and ideological structures of society must change so "appreciating life quality ... rather than adhering to an increasingly higher standard of living"
 - g) Those agreeing with these principles need to work for these changes.
 3. Solution = changing the values people hold. Education and direct action.
- C. Economic
1. Problem = natural resources are not priced right (no price or too low a price).
 2. Tragedy of commons by Garrett Hardin. Imagine can make \$20 if graze your cow on own farm.
 - a) Very similar to Prisoners' Dilemma problem but with many actors rather than 2, often known as N-person PD.
 3. Externalities are different type of problem: harmful side effects from producing or consuming something are felt by people not involved in the market transaction. Producers benefit by keeping costs down, consumers benefit by cheaper prices (and give more to favorite environmental group) but other members of society that value environmental resource are harmed.
 4. Solution =
 - a) Answer to tragedy of commons is "mutual restraint, mutually agreed upon," as in a treaty
 - b) Answer to externalities is "internalizing" the costs. E.g., "green" taxes on polluters but international taxes?
- D. Legal: certain behaviors are simply wrong and should not be allowed. Efforts to prevent people from engaging in "wrong" practices and punish if disobey. Basic question: Can international law make a difference or not? Do all the recent treaties matter, in the sense of increasing the chances for environmentally benign behavior?
1. Problem = legal obligations and rights not distributed properly. Legal system fails to provide equitable rights to all parties and therefore environment is being protected.
 - a) Future generations don't have legal rights. Edith Brown Weiss has written a very good book entitle In Fairness to Future Generations excerpts from which we will be reading later in the quarter.
 - b) Problem is in legal structure
 2. Solution = new laws: assumption that, although international laws are non-existent or wrongly formulated, good ones can be created that will remedy them. Enforcement is a meta-collective action problem
 - a) Legal approaches
 - (1) Liability and compensation. Trail Smelter case.
 - (2) Regulatory measures
 - (3) Dispute settlement - rarely used
 - (4) Enforcement - rare internationally, and only slightly more at national level.
 - b) If going to require sanctions, who will impose them? Why not free-ride on sanctioning by others – can you get collective sanctions?
 - c) If going to require payments? Who is going to pay, and why not free-ride on payments by others?
 3. Hard vs. soft law
 4. Difficulties in international level are several
 - a) Only applies to those who consent to it.
 - b) Few incentives for actors to enforce, and sometimes not even the power to do so.
- E. Political: "problematizing the state" and the "greening of sovereignty"
1. Problem = those with power don't have incentives to conserve environment, and those with incentives to conserve environment don't have power. Problem is not the lack of resources but their

distribution - dependency theory argues that developed world extracts resources from the developing world.

2. Solution =
 - a) Assumption that anarchic nature of international system prevents effective laws from being created and put into operation.
 - b) Liberal institutionalists believe that can create international institutions, treaties and regimes to encourage cooperation to preserve global commons.
 3. Sovereignty and the environment. Is it the problem? Litfin's (1997) argument. Really asking both what is effect of sovereignty on environment and what is effect of environment on sovereignty
 - a) Source of harm: National borders cross environmental borders and vice versa; collective action, tragedy of the commons, makes action unlikely if states act as "individuals"; nonintervention norm protects internal environmental destruction
 - b) Source of solution: only state has necessary and sufficient power resources to address problem; free trade challenges to sovereignty may harm the environment;
 4. If we could get rid of the state, should we?
 - a) Is it the power of states that lead them to destroy the environment?
 - b) Is it the interests of states that lead them to destroy the environment?
 - c) Should power go "down" to NGOs or go "up" to IGOs and regimes?
 - d) Once decide what should do, how would we get there?
- V. Two types (at least) of environmental problems
- A. Tragedy of the commons example
 1. Work through Cow example in class
 2. Key features:
 - a) Open access to resource
 - b) Demand exceeding supply
 - c) Relevant political aspect: those that are "perpetrators" of the problem are also "victims" of the problem.
 3. Real world examples: Fisheries, Whaling, Atmospheric pollution among concerned states
 - B. Upstream/downstream problems
 1. Key features of the problem
 - a) Relevant political aspect: those that are "perpetrators" of the problem are NOT "victims" of the problem.
 - b) Much harder to resolve
 2. Upwind/downwind pollution like acid rain that is regional not global
 3. Rivers like the Rhine or the Columbia
 - C. Implications for types of solutions
 1. Solutions likely to be harder to negotiate in up/down problems
 2. Rewards *required* for upstream/downstream problems
 3. Sanctions or rewards possible as international solutions to Tragedies of the Commons
- VI. Types of solutions - lots of involvement of non-state actors
- A. International treaties - Again, note that anarchy as absence of government does not mean absence of governance
 1. NGOs as source of pressure for agreement
 2. NGOs as monitors of agreement - NGO involvement in CSD - modeled on Human Rights experience
 3. NGOs as enforcers - Sea Shepherd and Greenpeace have taken direct action, often even when not a violation. Also can take approach of
 - B. NGO-Governmental agreements - Debt-for-Nature swaps - Greenpeace-China work on CFCs
 - C. Business-government agreements - Merck/INBio agreement - describe briefly
- VII. Climate change -- major things to know
- A. Climate Change vs. Ozone Depletion: Scientific differences in the problems
 1. Climate change -- responsible gases (and activities)
 - a) Carbon Dioxide - CO₂: energy production, transport, timber harvest, land-clearing, cement production
 - b) Methane - CH₄: food production (rice, livestock); energy prod'n (gas, oil, coal extraction); landfills & wastewater

- c) How we eat, heat, travel, and consume are all implicated in this problem
- d) Several other gases but keep it simple for starters
- 2. Stratospheric ozone depletion
 - a) Chlorofluorocarbons (and related chemicals) -- chlorine (and bromine) is the major element at fault
 - b) Used in refrigeration systems and air conditioners, solvents in cleaning electronic components, and for producing plastic foam
 - c) Chemistry: (from <http://www.ausetute.com.au/cfcozone.html>)
 - (1) CFCs destroy the ozone in the stratosphere (15 - 20 km above the earth's surface). Ozone loss is greatest over Antarctica where the ozone depletion has been recorded and is commonly referred to as the "ozone hole". Ozone (O₃) filters out short wavelength ultraviolet radiation which can cause serious sunburn, skin cancer and eye disorders.
 - (2) CFCs inert and water-insoluble, in stratosphere, UV light splits chlorine off CFC and the chlorine atoms then destroy ozone, and they can do this repeatedly
- B. Climate vs .weather
 - 1. Climate is **long term** trends and conditions
 - 2. Weather is **short term** changes
- C. Why its better referred to as "Climate change" vs. "global warming" -- better yet, "human-caused climate variation"
 - 1. Not just temperature but other aspects of the natural world as well
 - 2. Temperature -- most areas warmer; some areas colder; many areas different
 - 3. Rainfall -- Some areas more; some areas less; some areas different
 - 4. Storm intensity -- more frequent in some areas, less frequent in others
 - 5. Numerous other changes that all link back to greenhouse gas emissions
- D. The Science
 - 1. IPCC Consensus: Getting Stronger
 - 2. IPCC Conservative by Nature
 - 3. Basic Future Predictions
 - 4. Trust the Preponderance of Skeptically-Evaluated Evidence not the Consensus
 - 5. Numerous indicators
- E. The Next Climate Treaty: Obstacles to Progress
 - 1. Large, hard, and poorly understood problem
 - 2. Real and manufactured uncertainty
 - 3. Underlying conflict b/w two human values
 - 4. Most human behaviors implicated
 - 5. Behaviors central to current economic/social structures
 - 6. Mobilizing events unlikely
 - 7. Present costs, future benefits
 - 8. Tragedy of the Commons dynamics
 - 9. Developing countries:
Other issues & incapacity
 - 10. Developed countries:
Have the option to adapt
- F. The Next Climate Treaty: Options for Progress
 - 1. Options for progress: the roles of int'l treaties
 - 2. Norm development 1: Define common goals
 - 3. Norm development 2: Highlight "good" behavior
 - 4. Norm development 3: Define "bad" behavior
 - 5. Norm development 4: Make compliance easy
 - 6. Political options for follow-on to Kyoto
 - 7. Economic options for follow-on to Kyoto
 - 8. Technology options for follow-on to Kyoto
- G. Reasons for optimism
 - 1. Progress is being made at international level:
 - 2. International level
 - 3. Other levels

VIII. Differences from other international issues

A. Degree of involvement of non-state actors

B. Shift in power

1. Basis of power - power of an environmental resource comes from ability to not expend it.
 - a) Relational - Who - gives them power over the North.
 - b) Situational - What - gives them power to get concessions, if they negotiate well.
2. Distribution of power - North's new valuation of environmental goods essentially represents a major transfer in power resources to the South.
3. Fungibility of military power - if small in other areas, particularly small in environmental affairs

C. Values

1. As with human rights, deep conflicts among different countries and cultures in terms of their values
2. Whales vs. cows - one country thinks that a certain species should be protected from all slaughter regardless of whether that species is threatened or not. It uses all its power to force other country's to stop killing this animal. Is that ok?