

**Lecture #5**  
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- I. Introduction
  - A. **TO PREPARE FOR SIMULATION:** see if you can make optimal use of the commons if you owned it via the link on the website and read the simulation instructions themselves.
  - B. Develop a strategy for simulation: You will be able to decide how many cows you want to put on the commons in order to maximize the milk your cows produce (so you can share that milk with homeless people in your community). What is your strategy for ensuring that you and the rest of the class do not overgraze the commons? How will you convince other class members to adopt your strategy? What should you do in the meantime to make sure you still can give milk to homeless people this year?
- II. Economic: Problem = natural resources are not priced right. Solution = get prices and incentives right
  - A. Problem = natural resources are not priced right.
  - B. Solution = get prices and incentives right
  - C. Economic perspective has considerable sway. May not agree with it but should understand it. Problem = natural resources are not priced right.
    - 1. Natural resources usually don't have a price
    - 2. When they do, the price may often not reflect the total value to society.
    - 3. For example, mining rights to land do not reflect total value of land including views destroyed, etc. and same for timber harvest rights
    - 4. Problem is the economic structure
- III. Tragedy of commons (Garrett Hardin)
  - A. **BASIC PROBLEM OF THE COMMONS:** The incentives that the social structure of the situation provides to individuals lead them to take uncoordinated individual action that makes all of them worse off than if they coordinated their action. Each individual is always better off not cooperating regardless of what anyone else does, but if everyone doesn't cooperate, than everyone is worse off than if they did.
  - B. "Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons" (Hardin 1968).
    - 1. Village common in England and colonial New England towns was common property and access for grazing of one's cattle was unrestricted.
    - 2. Activity is individually uninhibited and individually beneficial but collectively costly.
    - 3. Current examples: Canadian and Spaniards fights over fisheries. But domestic problem: fisheries.
  - C. Characteristics and causes of commons:
    - 1. Open access causes overuse because of incentives
      - a) Benefits of use accrue to individual engaging in action
      - b) Costs are distributed to all users
      - c) Notice important change is simply a legal one: switching from private to commons is simply removing private property rights which serve to constrain use.
    - 2. Disincentives to self-restraint: No actor's decision to restrain themselves will reduce overuse unless all other actors do so
      - a) Benefits of self-restraint are distributed to others
      - b) Costs of self-restraint accrue to the person doing it.
    - 3. Aggregate demand must exceed carrying capacity -- open access doesn't create a problem when there is very low demand relative to carrying capacity.
    - 4. Those who use common are affected by the overuse. That is, "perpetrators" are also "victims".
    - 5. All actors more or less equally capable of exploiting environmental resource
    - 6. Setting up regulatory rules does not eliminate incentives for defection.
    - 7. Legal explanation of overuse: property rights are defined as "open access" – anyone has the right to use it with no constraints on level of use
    - 8. Economic explanation of overuse: costs to individual of using the commons are less than benefits to individual but costs to society are greater than benefits to society
  - D. Things that aren't causes of the problem
    - 1. Greed is not the IMMEDIATE/PROXIMATE cause of overuse of this type of overuse: farmers are equally greedy when using private farm or the commons. HOWEVER, if farmers were not greedy, then a problem wouldn't arise.

2. Capitalist economic structure is NOT the cause of this type of overuse: indeed, capitalism tends more toward private property.
- E. RUN THE SIMULATION
- F. Solution: “mutual coercion, mutually agreed upon.” Works at domestic level with taxes or private property, but what about at international level where nobody to enforce
1. Lin Ostrom found successes in Indonesian fishing villages, Alps farming; Spanish irrigation
  2. Treaties but still have incentives to use the commons, if can avoid being caught and sanctioned. Indeed, incentives to cheat increase if others comply (can make \$40/cow vs. \$25).
  3. Restrict who can use the commons
    - a) Economic: access fee: charge to gain access to commons but allow as much use as needed once on.
    - b) Legal: privatization: give one actor exclusive rights to commons and they will not overexploit
  4. Restrict how much people can use
    - a) Economic: user fees based on amount of use
    - b) Taxes: reduce incentives to overuse. But difficult internationally.
    - c) Legal: regulate how much actors can use
  5. Increase incentives for restraint: catch shares in international fisheries -- give actors a share of the benefits of self-restraint
- IV. Externalities
- A. Externalities: harmful side effects from producing or consuming something felt by people not involved in the market transaction.
1. Assume a commons is used as a park by most people, but use is unrestricted. Then, assume each of you realizes that it costs you \$100 per ton to have your cow’s manure carted away and your cows are producing ten tons per week. Then you realize that you can dump this manure on the commons without being told not to. Now you are benefiting \$1000 per week, the meat-buying consumer is benefiting by having cheaper steaks, but the people who like to use the park are worse off.
  2. Driving a car creates three kinds of externalities: a) local -- smog, imposing an externality on non-drivers as well as drivers; b) regional -- NOx enters atmosphere and contributes to acid rain; c) global -- CO2 enters atmosphere and causes climate change. Sometimes first type may be large enough within a country for it to take action, as with leaded gas ban in U.S. in 1970s. But sometimes local harms may be small or occur in other countries; then have international problem: Trail Smelter case and Murmansk case; LRTAP agreement; various marine pollutants.
  3. Air pollution, water pollution, land fills, hazardous waste use are classic examples of these sorts of externalities which are NOT Tragedies of the Commons. Producers benefit by lower costs, consumers benefit from cheaper prices, but other members of society that value environmental resource are harmed.
- B. Solution: “internalize” costs. Tax polluters so pollute less, e.g., tax gasoline. No international taxation. Establish values for goods so can tax at appropriate rate. But, how much is the “walk in the park” worth?
- V. Legal approach: certain behaviors are simply wrong and should not be allowed. Efforts to prevent people from engaging in “wrong” practices and punish if disobey.
- A. Problem = legal obligations and rights are not distributed properly. Legal system is not providing equitable rights to all parties and therefore environment is being protected.
1. Future generations don’t have legal rights. Edith Brown Weiss has written a very good book entitled In Fairness to Future Generations on the subject.
  2. Problem is in legal structure
- B. Solution = new laws. Assumption is that, while international laws are non-existent or wrongly formulated, good ones can be created that will remedy them
- C. Hard vs. soft law
1. Rules and regulations = hard law
  2. Guidelines, standards, principles and vague norms = soft law
  3. Not necessarily clear which is better.
  4. Customary international law - common practice becomes law over time. 200 mile EEZ is of this type.
- D. Difficulties in international level are several
1. Only applies to those who consent to it.

- a) May not reach agreement. Agreement may have to have double standards as with developed vs. developing states under Ozone and FCCC.
      - b) Even if reach agreement, can either officially opt out or fail to sign and ratify.
    - 2. Few incentives for actors to enforce, and sometimes not even the power to do so.
    - 3. International organizations facilitate formation of international law.
    - 4. NGOs can facilitate both negotiation and monitoring and enforcement elements of implementation. E.g.: Traffic, Greenpeace, International Conference for Bird Preservation, WWF, IUCN.
  - E. 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.
  - F. 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?
- VI. Conclusion:
- A. Economics: basic argument is that can increase economic well-being at same time as decreasing environmental impacts if can just get the prices of various commodities right.
    - 1. Dynamics of the commons
    - 2. Difference between a commons and an externality
  - B. Notice that Tragedy is linkage of economic and legal issues – the economic incentives are driven by the legal issue of owning it as a commons rather as private property. Notice that people’s values have less to do with it than structure of problem