

# Price on Nature's Services

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# Can we put a price on Nature's Services?

- How can we put prices on nature?
- 1. The goods in large-scale atmospheric or biospheric process or forces of nature.
  - That cannot be provided incrementally, divided, or in units: whole system or forgo
  - No meaningful way to price units of the global climate incrementally or at the margin
- 2. The goods that are or can be sold in incremental amounts, and therefore do trade in markets and thus do receive competitive prices
  - Fertile soil is a "public good" but is quite abundant relative to effective demand

# 1. Ecosystem services at the global scale

- **Regulatory markets**
  - Political authority has capped or limited the amount of pollution allowance
  - **Command-and-control regulation** made more consumer-friendly
- **Cap-and-trade policy** for carbon emission
  - Difficulty to impose a regulatory market on 'greenhouse' emissions lies in finding a suitable, meaningful, and acceptable principle for setting initial allowance.
  - Is it even possible?

# 1. Ecosystem services at the global scale

## 1) Labor's theory of Value

- Labor makes the far greatest part of the value of things we enjoy in the world, and the ground which produces the materials is scarce to be reckoned in, as any, or at most, but a very small part of it.
- Labor accounts for the economic value of agriculture
- Ecosystem services are possibly not worth a penny
- Locke, Ricardo, Marx
  - Amount of labor inherent in an object determines its economic value
  - *"The purely natural material in which human labor is objectified ... has no value"* – Marx

## 2) The welfare economists: Willingness to pay (WTP)

- Preferences do contain their own normative content
- Critics: Not normative, nothing of value

# 1. Ecosystem services at the global scale

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## 3) Ecological economist: Low entropy resource flows

- Essential value-giving limit on production do with the fund-flow of low-entropy resources
  - Economic growth, Natural capital
  - Natural itself has no economic value
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- **Physiological(Labor)**
  - **Psychological(WTP)**
  - **Material(Low entropy resource flows)**

## 2. The price of Land(Can be sold incremental amount)

- **The Lauderdale Paradox(Economic value)**

- The more freely and lavishly nature benefit is, the lower the price the marginal unit of a natural product or service will fetch
- The principal condition for economic value is scarcity
- Nature has no operating cost, benefit everyone freely, without creating scarcity.

- **Value in exchange** - Adam Smith

- What can be obtained by exchange for the good
- Market price or value in exchange does not correlate with benefit
- Advance in technology, by driving down the production costs of a good lower its competitive market price.

## 2. The price of Land

- **Locke** and the price of Land
  - Natural materials traded at very small amounts relative to the price of labor and technology
- Cropland was initially free
  - Land was so plentiful relative to demand, that the price of the marginal acre was minimal.
  - Homestead Act, 1863, US gov gave a quarter-section free to anyone
- If the price of fertile land is negligible, the economic value of food must be charged on the account of labor
- **Real Estate**: Price of land is controlled by location
  - The closer the land is located to cities, even if the uses of the land are same.
  - Transportation costs will diminish the economic value of land
  - Fertility fall away from markets

### 3. Critics on Sagoff's approach

- **Sagoff's Approach of methodical conception**
- Citizen vs Consumer
  - Citizen: concerned of public interests
  - Consumer: private interests, pursuit of preference-satisfaction
- **Value-judgements**
  - Externalities: External cost to enter cost-benefit analysis. 'a category-mistake'
- Methodological conception of rationality in environmental decision
  - Economism vs value: Economistic approach does not express or rely upon any ethical or evaluative principles
  - Value-premise: questions about right actions are dealt with methodically, preference-satisfaction
  - Value-premise is accepted, with democratic debate.



### 3. Critics on Sagoff's approach

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- Shared value of Consumption
  - **Shared value**: summation of individual's concerns of their own well-being
  - **Consumption** is part of the good life for society. – Individualism

## 4. Preference Model

- **Preference: Unit of measure of the willingness of the individual to pay**
  - Economists can associate economic behavior with dollar values
  - Values people care about are what they are willing to act upon: How strong they desire?
  - Individual social values
  - WTP/WTB: Methodologically advantage to measure quantified system of analysis.
- **Consumer Sovereignty: What individual wants is presumed to be good for that individual** (Randall, 1988)
  - 1) Competitive Advantage Argument: individual preferences should be aggregated for social welfare - microeconomic analysis
  - 2) Direction-of Analysis Argument : CS is tracing causation from preferences to changes in behavior
  - 3) Value Neutrality Argument: No value commitments beyond individual's preferences.
  - 4) Democracy Argument

# Questions

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- What makes economic value of environment different with other goods?
- The value of sustainability would change for intergeneration
  - The cost of non-decision in ecology
  - The cost of current and future – the cost of spending era and effect era would be differ.
- Are preferences value-neutral?
  - The market for substitute meat and animal welfare product
  - Should policy-makers consider micro-economic preferences?