Session 4.2
Project and the Environment

Introductory Course on Economic Analysis of Investment Projects
Types of project

- ‘Environmental projects’ – wetlands, power rehabilitation
- Projects with significant by-product effects – logging, fishing, dams, power
- Projects with minor by-product effects – most projects have some effect
Bank Policy

- EIA mandatory for large projects
- Lists impacts
- Follows ‘polluter pays’ principle
- Requires mitigation be included in project costs
- Eg resettlement, air and water treatment, wildlife protection
- Problem is unanticipated or unmitigated effects eg climate change
Valuation Methodologies

- Market-based approaches (e.g., costs of damage or mitigation)
- Implicit markets (e.g., hedonic pricing, travel cost)
- Direct surveys (contingent valuation)
Cost-based

- Common to focus on foregone output e.g. loss of agricultural yields due to soil erosion, or output losses due to flooding.

- If cost estimates are available they must be weighted by probability of damage occurring.

- E.g. risk of sea level rise due to global warming.
Implicit markets

- Relatively common in developed countries

- Use of a model to explain property prices to infer cost of noise pollution or air pollution eg due to proximity to airport extension or new road

- \[ P = f(H, X, E) \]
  Where P is property price, H is house characteristics, X is area characteristics and E is environmental impact
Contingent valuation

- Survey approach
- Apply repeated bids to establish willingness to pay to preserve environmental feature - e.g., scenic view, open spaces, wildlife
- Same methodology can be applied as in water, including benefit transfer
- Difficulty in explaining idea of paying for environment
Discount rate

- Should normal rate apply?
- Rise in relative scarcity of environmental assets is equivalent to adjusted lower rate
- Stern Review on Climate Change used a discount rate of close to zero (based on possibility of world extinction)
- Other Environmental studies suggest rates of 1.0% -3.0 % based on declining utility of income
Thank you