Achieving Effectiveness, Efficiency, Equity, & Co-Benefits

GLOBAL CLIMATE CHANGE, FOREST CONSERVATION & REDD+

ROAD MAP

- Climate change problem definition and relationship to forests
- Alternative approaches to forest conservation
- Introduction to REDD as a global, national and sub-national architecture
- REDD+: Alternative perspectives & discussion

CLIMATE CHANGE: PROBLEM DEFINITION

- Problem: Dissonance between current or expected state of affairs, and a desired current or future state of affairs
- Problem Definition: Goals, Trends, Conditions, Projections, Alternatives

CLIMATE CHANGE: PROBLEM DEFINITION

- Goals: Maintain mean global temperatures, sea levels, and regional precipitation patterns

- Trends: Temperatures are increasing, sea and land ice is melting, precipitation patterns are likely to be disrupted

CLIMATE CHANGE: PROBLEM DEFINITION

- Conditioning Factors: CO_2 in the atmosphere is rising, and is linked to global mean temperatures. Anthropogenic sources of CO_2 include fossil fuel emissions (~80%) and land use change (~20%). Of the latter, tropical deforestation is hugely important.

CLIMATE CHANGE: PROBLEM DEFINITION

- Projections: Population will continue to grow (7 billion in a month), energy demand will increase, deforestation pressure will increase, climate change will continue
- Alternatives: ??????????????????

CLIMATE CHANGE: POLICY ALTERNATIVES

Mutually exclusive options:

1. Do nothing (business as usual)
2. Do nothing RE: climate change processes, but adapt
3. **Mitigate (next slide expands) and/or adapt**

CLIMATE CHANGE: MITIGATION

- Fossil fuel use (~80% CO_2)
  - CO_2: CO_2 emissions resulting from human activities E: Primary energy consumption G: GDP P: Population

Kaya Identity: Formula that represents the relationship between human activities and CO_2 emissions

$$CO_2 = \frac{CO_2}{E} \times \frac{E}{G} \times \frac{G}{P} \times P$$

($\frac{CO_2}{E}$: CO_2 emissions per unit energy consumption; $\frac{E}{G}$: Energy efficiency of economic activities; $\frac{G}{P}$: Economic level per capita)

- Deforestation and forest degradation (~20% CO_2)
  - Command and control
  - Taxes and subsidies
  - **REDD+ programs**

CLIMATE CHANGE MITIGATION

- 247 Gt C in forests (32% of atmospheric)[1]
- Large annual sequestration
- Up to 20% (more recently 17%) of global CO2 emissions from deforestation[2]

1 Saatchi et al. 2011
2 Food and Agricultural Organization of the UN

EQUITY AND POVERTY

- ~300 million people live in forests
- ~1.6 billion people depend largely on forest resources
- ~60 million indigenous people dependent on forests

Source: Food and Agricultural Organization of the UN

WHY CONSERVE FOREST RESOURCES?

- Ecosystem services
- Equity and poverty (access for the marginalized)
- Climate change
- **Externalities**

EXTERNALITIES

A cost or benefit of an economic transaction that is not reflected in the price

The welfare of some agent, either a firm or a household, depends on the activities of some other agent.

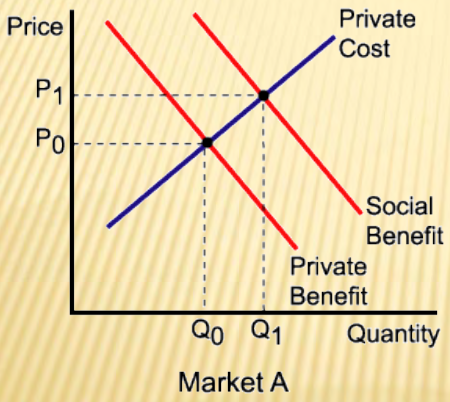
e.g., my well is polluted by chemicals from a factory next door; a group of villagers cannot obtain firewood because a timber plant has fenced off the forest

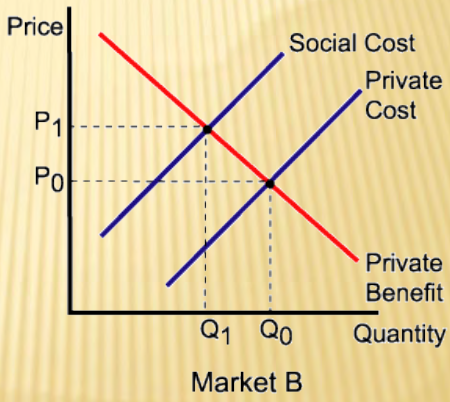
HOW CAN FORESTS BE CONSERVED? COMMAND AND CONTROL

- Effective
- Enforceable

- Equitable?
- Efficient?

HOW CAN FORESTS BE CONSERVED: COMMAND AND CONTROL, TAXES AND SUBSIDIES





COMMAND AND CONTROL, TAXES & SUBSIDIES

- Enforceability: incentive to break the law
- Efficiency: we are uncertain about the true social costs and benefits of deforestation
- Equity: some actors benefit, others can lose, and some are more vulnerable than others

PAYMENTS FOR ENVIRONMENTAL SERVICE: COASE AND TRANSACTION COSTS

- 1960 paper "The Problem of Social Cost"
- When a party produces an externality, an efficient allocation of resources will be achieved through a free market, as long as property rights are clear
- Example: your neighbor has a large tree in his yard, which shades your yard, which you like. It threatens his house, but not yours, so he wants to cut it down. If his perceived risk to his house is equal to or less than the shade's value to you, you can pay him to not cut down the tree, and everyone wins
- **What is different about this example and global deforestation?**

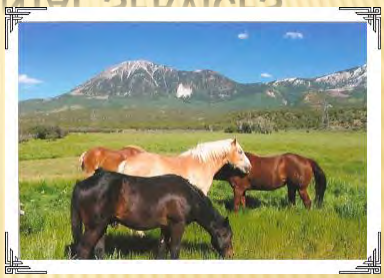
PAYMENTS FOR ENVIRONMENTAL SERVICES

- (1) a voluntary transaction in which
- (2) a well defined environmental service (or a land use likely to secure that service)
- (3) is "bought" by a (minimum of one) buyer
- (4) from a (minimum of one) provider
- (5) if and only if the provider continuously secures the provision of the service (conditionality).

PAYMENTS FOR ENVIRONMENTAL SERVICES

- Market-based mechanism
- Not command-and-control
- Aim is to secure socially optimal provision of environmental goods
- And to minimize negative externalities (e.g., Climate Change)

PAYMENTS FOR ENVIRONMENTAL SERVICES



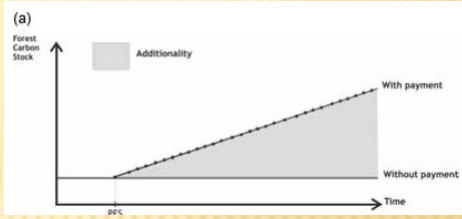
- Area based
  - Conservation easements
  - Forest plantations
- Green premium
  - Certified products
  - Organic agriculture or sustainable forestry
- Public: bigger, lower-cost, but less efficient and flexible than private

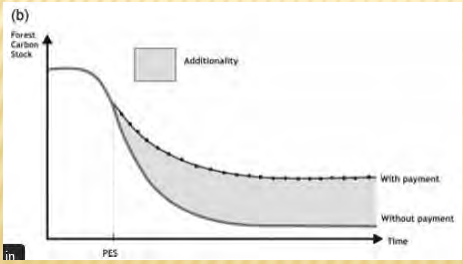
CHALLENGES FACED BY PES

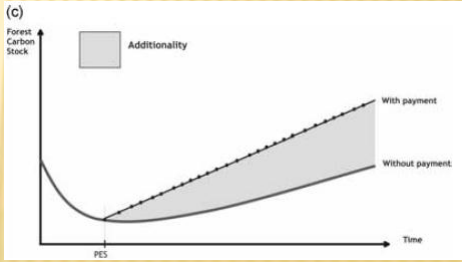
- Demand side limitations (willingness to pay)
- Supply side uncertainties (institutions and incentives required)
- Communication: experts talking past each other
- Monitoring, governance, and enforceability

CHALLENGES: ADDITIONALITY

- The baseline matters a **lot.** And it's hard to get a true "baseline"





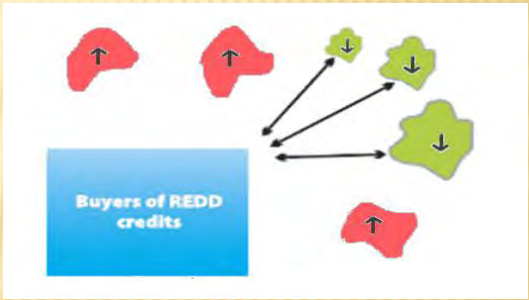


Source: Wunder 2006

CHALLENGES: LEAKAGE

Decreases in deforestation in one area can be nullified by increases in another.

Leakage →



Source: Angelsen 2009

CHALLENGES: EFFICIENCY AND FAIRNESS

- Consider three applicants:
  - Forest owner who seeks to convert to soybeans
  - Cattle ranchers who make less profit than soybean farmers, but are interested in reducing deforestation
  - Indigenous community that values the land but doesn't tend to deforest anyway

CHALLENGES: EFFICIENCY AND FAIRNESS

- Property rights security is necessary (and not always present)
- Elites can capture benefits
- Marginalized people can lose out if appropriate safeguards are absent (e.g., Indonesia)

REST OF THIS LECTURE INTRODUCES REDD+, A GLOBAL FRAMEWORK FOR REDUCING DEFORESTATION AND FOREST DEGRADATION

CONSIDER THE ABOVE CHALLENGES IN THIS DISCUSSION, AND THINK CRITICALLY ABOUT THE BENEFITS AND DRAWBACKS TO REDD+

HOW DO THE ARGUMENTS YOU'VE READ IN HULME, OKEREKE, AND OTHERS RELATE TO REDD+/

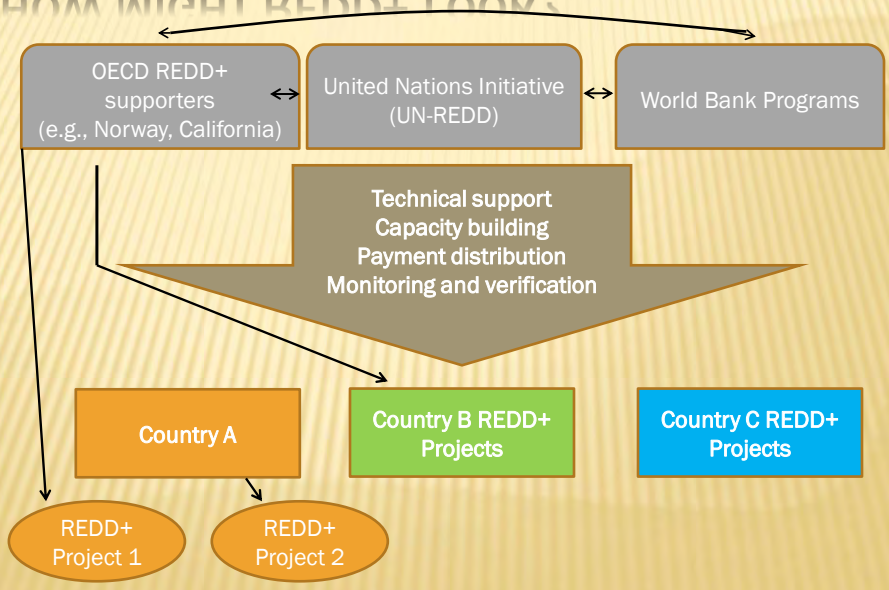
WHAT IS REDD?

- Reducing Emissions from Deforestation and Forest Degradation in developing countries
- Mechanism to create an incentive for developing countries to protect, better manage and wisely use their forest resources, contributing to the global fight against climate change.

WHAT IS REDD+?

- Reducing Emissions from Deforestation and Forest Degradation (+Enhancing Forest Carbon Stocks) in developing countries
- National and sub-national programs and strategies for deforestation that aim to join the global REDD framework

HOW MIGHT REDD+ LOOK?



REDD+: WHERE IS IT NOW?

- $169.8 million dollars pledged to UN-REDD directly (Norway, Denmark, Spain, Japan, EC)[1]
- $54.4 million allocated to nine pilot countries
- Billions "committed" (e.g., $1 billion from Norway to Indonesia bilaterally)
- 36 UN-REDD countries, more REDD+ projects

REDD+ AND PES

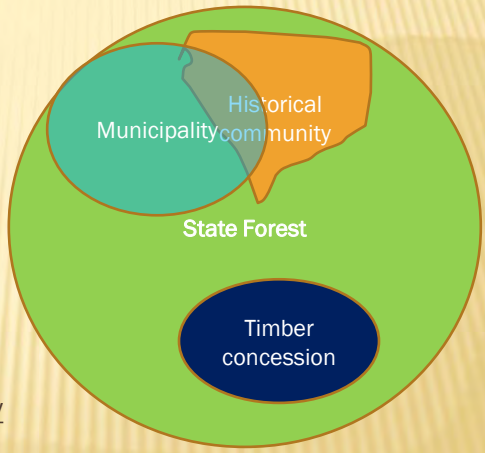
- REDD+ projects are *not* necessarily PES
  - Any reduction in deforestation/forest degradation may be eligible
  - Some REDD+ projects may be PES schemes
  - Should all projects be treated equally?

REDD+ CHALLENGES

- Additionality
- Leakage
- **Transaction costs (are the above included in this?)**
  - Contract negotiation
  - Monitoring, reporting and verification
  - Enforcement of contracts
- Equity and unintended consequences

REDD+ TRANSACTION COSTS

- Contract negotiation
  - Who owns the land?
  - Who uses the land?
  - Who protects the land?
  - *de facto vs. de jure* rights?
  - Sorting this all out is costly



REDD+ TRANSACTION COSTS

- Monitoring and verification: incentives
  - Donors may want cheap credits
  - Sellers may want low enforcement (high returns)
- Monitoring and verification: questions
  - Who should monitor?
  - What should be monitored and how?

REDD+: TRANSACTION COSTS

- Enforcement
  - Can payments reliably be withheld?
  - What if sellers fail to reduce deforestation for very good reasons?
  - Who should enforce contracts?

REDD+: A STEP BACK

- Is this the best option on the table?
- What does it take to justify a policy like this?
- How effective do you think it will be?
- How efficient?
- How equitable?

REDD+: TWO ALTERNATIVE PERSPECTIVES

REDD+: TWO ALTERNATIVE PERSPECTIVES

QUESTIONS?

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