Factors to Consider in Choosing Instruments to Promote Environmental Services

Sara J. Scherr and Andy White
Katoomba Group Workshop
Kew Gardens, U.K.
March 14-16, 2002
Objectives of Paper

1) Describe range of instruments available to promote environmental services of forests
2) Identify advantages, disadvantages and conditions required for successful use of specific instruments
3) Provide examples of the development of diverse instruments from Katoomba Group related initiatives
Instruments to Promote Ecosystem Services (I)

1) Public control and management of resources (e.g., biodiversity reserves)

2) Public regulation of private resource management (e.g., forest mgmt plans, restrictions on clearing)

3) Pricing to “internalize” environmental cost/benefit (e.g., stumpage fees, tax benefits for afforestation)

4) Pollution permit markets with regulatory cap (e.g., carbon emissions trading, TDRs)
Instruments to Promote Ecosystem Services (II)

5) Support self-regulation and innovation in resource management by local communities (e.g., LandCare in Australia)
6) Public payments to producers for services (e.g., NYC pays landowners for water quality)
7) Private deals for environmental services (e.g., bottlers pay upstream landowners)
8) Eco-labeling of marketed products (e.g., forest product certification)
Key Factors to Consider in Selecting Instruments

a) Biophysical features of ecosystem service
b) Context for implementation
   - Economic conditions
   - Institutional conditions
   - Political conditions
c) Management complexity
d) Economic costs
e) Equity
Biophysical Features of the Ecosystem Service

- Certainty of link between resource management and environmental outcomes
- Whether beneficiaries are clearly defined
- Ease of monitoring actions and outcomes (e.g., whether resource is fixed or moving/growing)
- Sensitivity to specific spatial configuration of land use or management
- Compatibility between economic use and provision of ecosystem service
- Urgency of threat to ecosystem service
Economic Conditions

- Sensitivity of the instrument to the opportunity costs of land or resource
- Need for well-functioning market institutions
- Perceived economic value of ecosystem services to users and capacity to pay
- Economic capacity of producers to improve resource management
Institutional Conditions

- Capacity of local regulatory institutions (regulations, registries, monitoring)
- Capacity of producer cooperative institutions
- Functioning of the legal system
- Clarity/security of property rights for land
- Clarity/security of rights for ecosystem services
- Degree of trust among stakeholders (social capital)
Political Conditions

- Political power of landholders relative to beneficiaries of ecosystem service
- Perceived legitimacy of landholder, beneficiary claims, and legitimacy of government action to defend them
- Presence of leaders, “champions”
- Degree of environmental awareness and “consensual vision”
Property Rights for Ecosystem Services & Instrument Selection
Management Complexity

- Production, marketing, business skills required of producers
- Managerial skills required of private businesses and traders
- Managerial skills required of public agencies
- Prior experience in ecosystem markets
- Risk of non-performance, risk management
Economic Costs

- Cost to plan and set up system
- Cost for agency to operate
- Incidence of costs: landholders, taxpayers, consumers, forest users, other businesses
- Risk of unanticipated costs

[relative to economic value of environmental outcomes]
Equity

- Potential threats to livelihoods of the poor
- Potential to enhance the value of resources owned by, or ecosystem services provided to, the poor
- Access of the poor to institutions providing support or payments
- Participation of poor producers and consumers in developing programs and rules
- Safeguards for the poor and vulnerable
(1) Public Control and Management of Resources

- **Advantages:**
  - Where services & economic use incompatible
  - Can implement w/o strong property rights, legal system
  - Where low landholder power, awareness, skills

- **Requires:**
  - Moderate to strong public mgmt capacity

- **Disadvantages:**
  - Insensitive to opportunity costs
  - Hard to defend w/o local support

- **Costs:**
  - Paid by taxpayers (and locals if lose use rights)
(2) Public Regulation of Private Resource Management

**Advantages:**
- May be spatially sensitive; fast response to threat
- If production & ecosystem service incompatible
- Where markets are poorly developed

**Requires:**
- Well developed legal system; competent agencies
- Moderate-high political consensus

**Disadvantages:**
- Insensitive to opportunity costs
- Often economically inefficient, hardest on the poor

**Costs:**
- Moderate-high; paid by landholders (& taxpayers)
(3) Pricing to “Internalize” Environmental Costs & Benefits

- Advantages:
  - Simple, sensitive to opportunity costs, flexible

- Requires:
  - Well developed markets
  - Moderate political consensus; public capacity

- Disadvantages:
  - No spatial sensitivity
  - Production systems may not be price-sensitive

- Costs:
  - Moderate costs for planning, operation
  - Paid by producers, consumers and forest users
(4) Pollution Permit Markets under Regulatory Caps

- **Advantages:**
  - More flexible than simple regulation
  - Sensitive to opportunity cost, induces new technology

- **Requires:**
  - Well developed market, legal, property institutions
  - High environmental awareness, political support
  - High skills of producers, agencies, private sector
  - Rigorous monitoring

- **Disadvantages/Costs:**
  - Complex; high producer costs
  - Difficult for poor to participate
(5) Support Self-Regulation and Innovation by Communities

- **Advantages:**
  - Spatially sensitive
  - Flexible and voluntary; improves technology

- **Requires:**
  - High environmental awareness of producers
  - Strong local institutions and agency capacity
  - Technologies for compatible production/services

- **Disadvantages**
  - Low priority to outside benefits; change is gradual

- **Costs:**
  - Moderate costs for landholders, taxpayers or agencies
(6) Public Payments for Environmental Services

- **Advantages:**
  - Sensitive to opportunity costs

- **Requires:**
  - Clear property rights, fairly good legal system
  - High landholder power or political consensus
  - Strong public agency capacity

- **Disadvantages:**
  - Complex to plan, monitor; may be politicized
  - Often not spatially sensitive

- **Costs:**
  - Moderate/high costs; paid by taxpayers (or consumers)
(7) Self-Organized Private Deals for Environmental Services

- **Advantages:**
  - High spatial sensitivity
  - Sensitive to opportunity costs
  - No need for political consensus or public capacity

- **Requires:**
  - Good ecosystem monitoring
  - Clear property rights, good legal system
  - Beneficiaries clearly defined
  - Strong producer business skills or advice

- **Disadvantages:** ??

- **Costs:**
  - Mainly private business or conservation agency
(8) Eco-Labeling of Products

- **Advantages:**
  - Compatibility between production and services
  - Minimal political or institutional requirements

- **Requires:**
  - Well developed product markets
  - Environmental awareness by consumers
  - Good producer business skills or advice

- **Disadvantages:**
  - Not always spatially sensitive

- **Costs:**
  - Moderate to high costs for producers
  - Costs shared with consumers/intermediaries
Interaction of Instruments

- Evolution (e.g., from regulation to self-regulation; from payments to markets)
- Complementarities (e.g., pollution credit market as alternative to regulation; “real” prices support other instruments)
- Direct linkages (e.g., payments for services to self-organized communities; tax agrochemical to finance environmental service payments)
- Contradictions (e.g., payments for ecosystem services can undermine self-regulation)
Case Studies of Instrument Selection and Evolution

- British Columbia (litsak Forest Resources)
- Brazilian Amazon (A2R)
- New South Wales, Australia (NSW Forests)
- Others....

Can you help by filling in the questionnaire?