

Defining Payments for Ecosystem Services



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Defining Payments for Ecosystem Services

- Why 'Payments' for Ecosystem Services?
- Definition of PES
- Types of Payments and Markets
- Who Pays and Who Receives
- Roles & Responsibilities
- Potential Risks





Why “Payments”?

- Nature has provides these services to us for free
- Consumption of ecosystem goods favored over the conservation
- Market forces must realign to invest in the production of both ecosystem goods and services
- Increased investments in ecosystem services leads to increased production of ecosystem goods
- This will fuel sustainable economic growth and ecological restoration



Definition of PES

A payment for environmental services scheme is:

- 1) a **voluntary** transaction in which
- 2) a **well-defined** environmental service (ES), or a form of land use likely to secure that service
- 3) is bought by at least one ES **buyer** from a minimum of one ES **provider/seller**
- 4) if and only if the provider continues to supply that service (**conditionality**).



(Source:http://www.cifor.cgiar.org/pes/_ref/about/index.htm)



Types of Payments and Markets

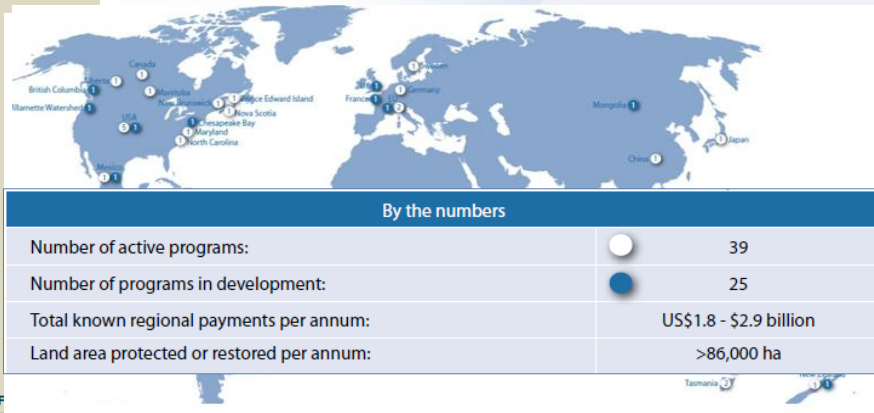
- Biodiversity
- Water
- Carbon
- Others: Scenic beauty (eco-tourism), bundled services (land trusts, conservation easements)



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Biodiversity PES



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Biodiversity PES: What is included?

- Establish biological corridors
- Create and strengthen protected areas
- Replant degraded areas with native species
- Remove invasive alien species
- Minimize need for fertilizers and pesticides
- Conserve outside of project areas
- Manage biodiversity to:
 - maintain quality agricultural products
 - ensure pest control, pollination, genetic resources, habitats
 - preserve cultural spiritual or aesthetic valued areas



Biodiversity PES: Market Drivers

- Scientific evidence of biodiversity importance in ensuring reliable access to natural resources
- Concern emerging in key financial services institutions
- Permitting challenges, lawsuits, and regulatory concerns emerging around biodiversity





Water PES

Payments for Watershed services
(quality & quantity)

- Paying land owners
- Purchasing land

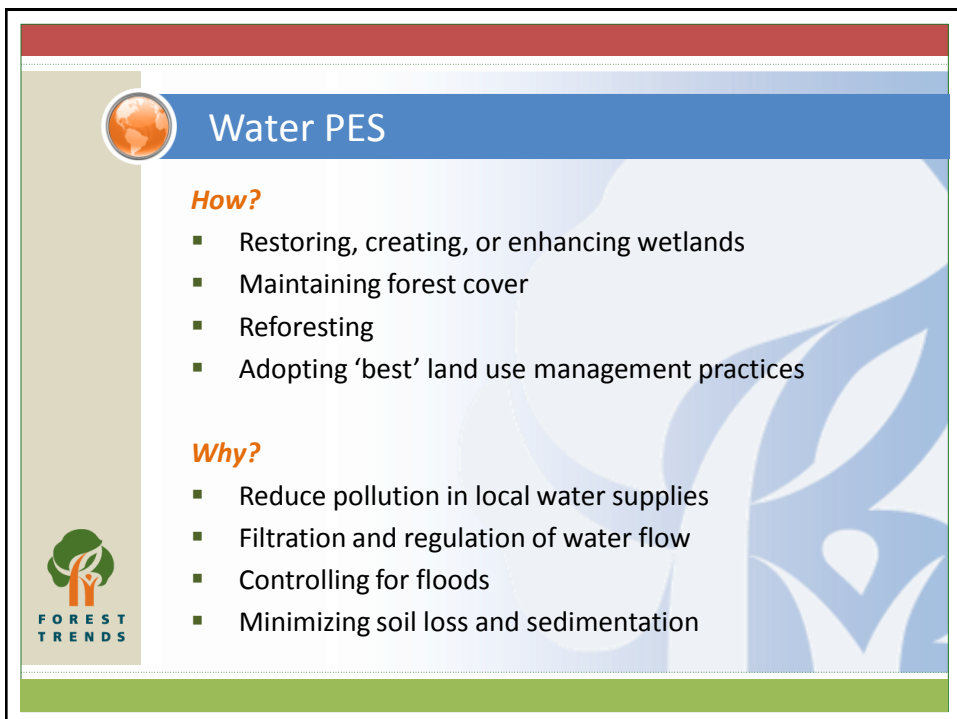
Nutrient trading

- Nitrogen, phosphorus, sediments

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Water PES

How?

- Restoring, creating, or enhancing wetlands
- Maintaining forest cover
- Reforesting
- Adopting 'best' land use management practices



Why?

- Reduce pollution in local water supplies
- Filtration and regulation of water flow
- Controlling for floods
- Minimizing soil loss and sedimentation

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Water PES: Market Drivers

- Scientific evidence growing about water quantity and quality issues
- Concern rising over future water availability
- Regional and national political pressure to take action on water issues
- Interest in new mechanisms for protecting water quality and quantity

Carbon PES

Regulated Carbon:

- Kyoto Protocol
- Cap and trade
- GHG offset credits

Voluntary Carbon:

- Variety of carbon sequestration project types
- Forestry included
- Markets: Chicago Climate Exchange, Voluntary OTC





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Carbon PES

HOW?

- Preventing deforestation (including through REDD)
- Reforesting land, particularly in tropical regions
- Reducing farm emissions (methane, nitrogen, etc.)
- Conservation tillage to minimize soil's release of carbon
- Avoiding actions that increase acidity of the ocean and release carbon



Carbon PES

WHY?

- Keeping carbon dioxide in trees, oceans, and soil rather than releasing it into the atmosphere
- Increasing the uptake of carbon by trees and within forests
- Preventing:
 - release of methane to the atmosphere
 - increases in the atmospheric temperature
 - acidification and warming of the oceans





Carbon PES

MARKET DRIVERS

- Scientific consensus about human contribution to climate change
- Clarity that a regulatory carbon-constrained future is imminent
- Insurers', investors', and consumers' concerns related to climate change
- National regulations on pollutants such as SO₂ and NO_x




Market Sizes: Summary

Table 2. Market Value of Environmental Markets

Environmental Market	Market Value (2008)
Regulated Carbon	\$117,600,000,000
Water Quality	\$9,250,000,000
Biodiversity	\$2,900,000,000
Voluntary Carbon	\$705,000,000
Forest Carbon	\$37,100,000






Who Pays and Who Receives?

Providers/ Receivers:

- Landowners (forest, agriculture, wetland)
- Private agencies
- Farming cooperative members
- Municipalities
- Government agencies

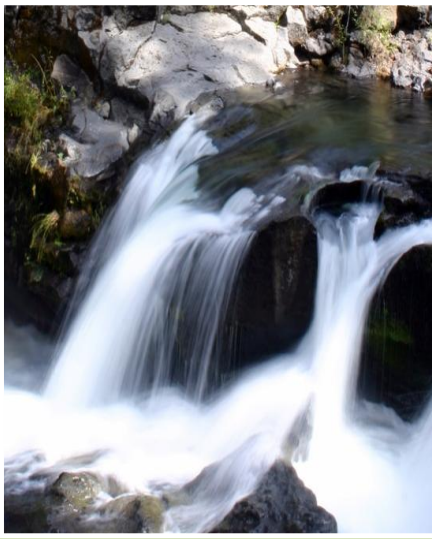
Market shapers/ Facilitators:

• Regulators	• Policy-makers
• Advocates	• Critics
• Philanthropic investors	• Development agencies
• Trade associations	• Brokerages




Who Pays and Who Receives?



- Government
- Private buyers in regulated markets
- Voluntary private buyers
- Philanthropic buyers
- Buyers of eco-certified products




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Ideal Conditions for PES

- Demand for ecosystem services is clear and financially valuable
- Supply is threatened
- Specific resource management actions have the potential to address supply constraints
- Effective brokers or intermediaries exist who can assist
- Contract laws exist and are enforced
- Resource tenure is clear

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Opportunities for Landowners

Short-Term

- Increased cash income
- Expanded experience with business activities
- Increased knowledge of sustainable resource use practices

Long-Term

- Improved resilience of ecosystems
- Potential for higher land productivity




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Potential Risks

- Opportunity costs
- Potential loss of rights to harvest products; unfair outcomes
- Potential loss of employment
- Confusion over rights to resources
- Increased competition for land
- Performance risk
- Loss of control over local development decisions




Conclusion

- We now understand:
 - The concepts behind payments and markets for ecosystem services
 - Definition of Payments for Ecosystem Services (PES)
 - Types of payments and markets
 - Who pays and who receives?
 - Risks and opportunities for landowners
- Thank you! Questions?

