

Presentation given at the Southeast Asia Katoomba meeting

Katomba XVII

Taking the Lead: Payments for Ecosystem Services in Southeast Asia

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Hanoi, Vietnam

Hosted by:

Forest Trends, the Katoomba Group, Ministry of Agriculture and Rural Development (MARD), Ministry of Natural Resources and Environment (MONRE), United States Agency for International Development (USAID) and Winrock International



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The Frontier of Payment for Ecosystem Services: Protecting and Maintaining Marine and Coastal Ecosystem Services

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Katoomba Meeting XVII



The Value of Coastal Ecosystems

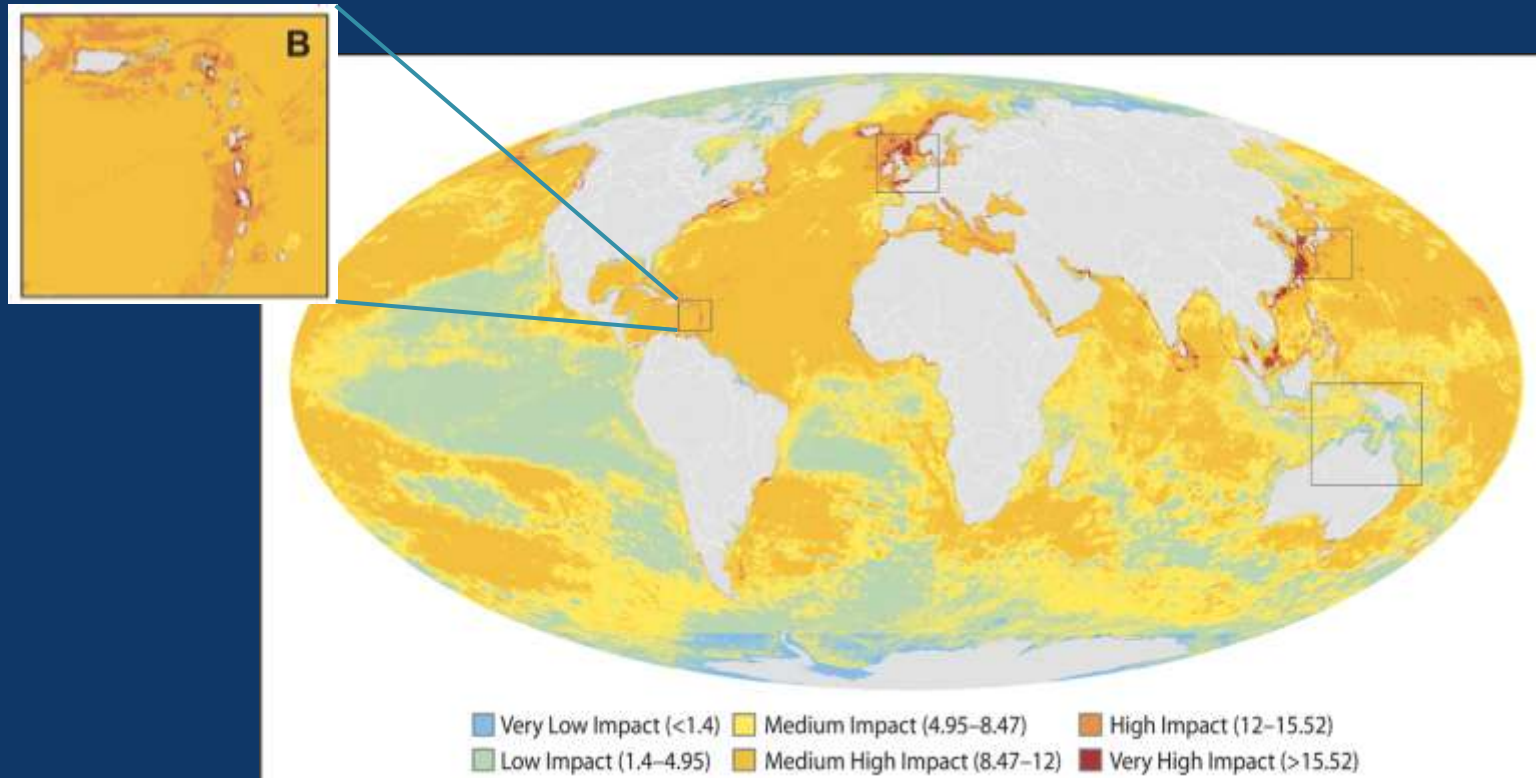


World's coastal land mass: 5%
Global population supported: 38%

Marine and coastal ecosystems provide a *disproportionately* large amount of services to world's populations.

Source: Millennium Ecosystem Assessment. 2005

Human Impacts on Coastal & Marine Environments



96% of world's ocean impacted by human activity

Source: Halpern et al. 2008 . *Science*.

Risks of Marine & Coastal Degradation



The results:

- Fisheries catch ↓ as efforts ↑
- Coastal habitats ↓ leading to ↑ erosion & ↓ storm buffering
- Pollution ↑ leading to ↓ coastal water & seafood quality

Marine & Coastal Ecosystem Services

Provisioning Services



- Food (Fish & seaweed)
- Energy & Fuel
- Minerals & Materials
- Water (desalination)

Supporting Services



- Soil & sand formation
- Photosynthesis
- Nutrient cycling
(carbon cycling)

Regulating Services



- Climate regulation
- Carbon sequestration
- Shoreline stabilization
- Storm & flood protection
- Water Purification
- Waste treatment

Cultural Services



- Tourism
- Recreation
- Spiritual values
- Education
- Aesthetics

Analogies to Standard PES

- Avoided deforestation & degradation (e.g., REDD)
 - avoided deforestation & degradation of mangroves, seagrass beds & salt marshes
- Reduced erosion in river and streambeds
 - avoided erosion of beaches & coasts
- Water quality markets
 - coastal water quality markets
- Biodiversity Offsets
 - for marine & coastal habitats
- Species Banking
 - for marine species



Contrast to Terrestrial PES



Contrast to Terrestrial PES



Open
Access



Contrast to Terrestrial PES



Open
Access

Disaggregated
stakeholders



Contrast to Terrestrial PES



**Open
Access**

**Disaggregated
stakeholders**



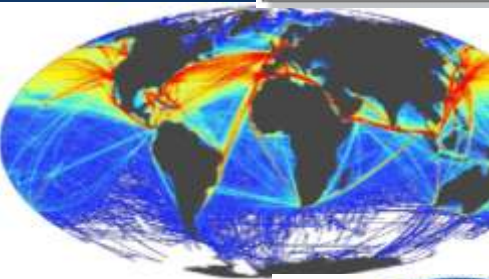
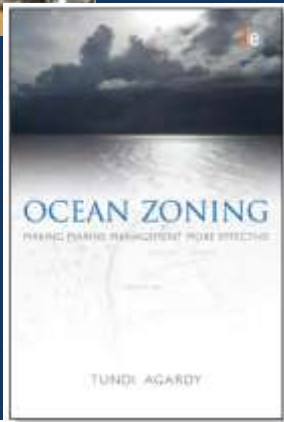
**Lack of
ownership
& unclear
tenure /
use rights**

Coastal & Marine Payments for Ecosystem Services

- Requires synergies between communities & government and land & marine resource managers, where mutual goals can be met.
- Even more than on land, requires institution-building in coastal communities, such as:
 - Cooperatives
 - Community groups
 - Professional associations



Potential Tools for Marine & Coastal PES



- Public-Private partnerships & voluntary PES
- Emerging / Existing water quality markets, wetlands banking, biodiversity offsets
- Ocean zoning & Marine Spatial Planning
- Land / Sea ownership, easements, leases
- Fisheries Catch Shares and Individual Tradable Quotas
- Certification
- Revenue generating schemes (e.g. licenses and fees)

Near-term Marketable Marine Ecosystem Services



Carbon Sequestration



Fish Nurseries



Coastline and Beach Stabilization



Coastal Water Quality



Marine Biodiversity

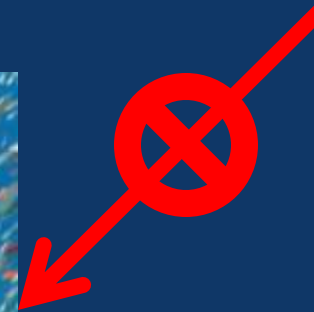
Mangrove Carbon Credits



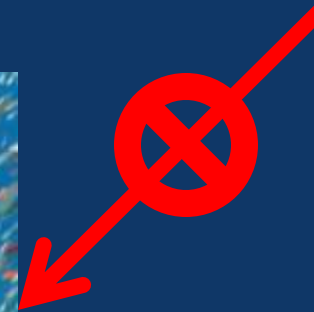
Carbon Capture of Mangroves:
6 x undisturbed Amazonian Rainforest
+
Many co-benefits



Fisheries no-take zone in Puerto Morelos, Mexico



Fisheries no-take zone in Puerto Morelos, Mexico



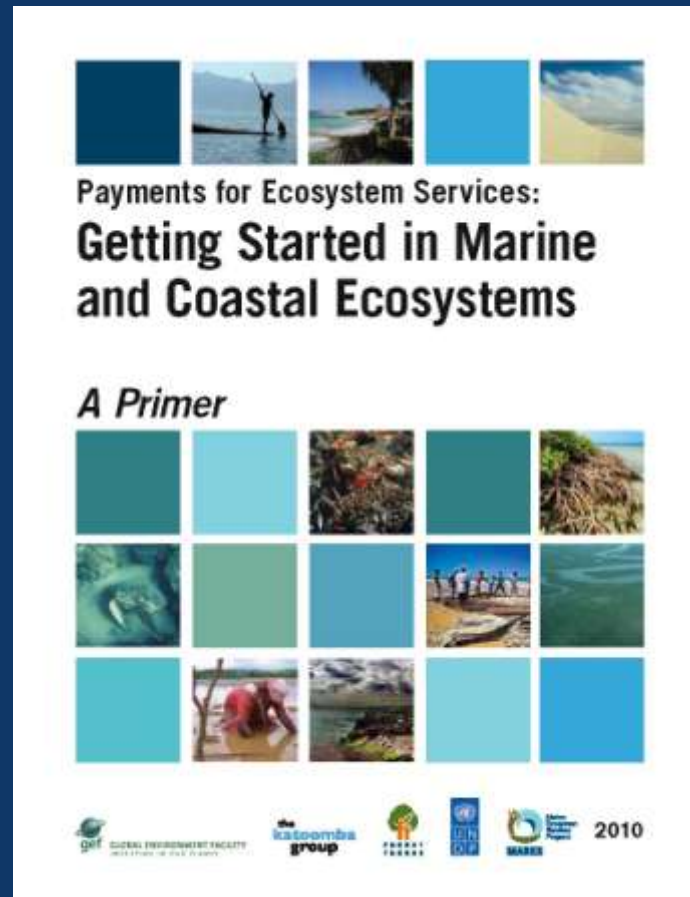
Beach Maintenance in San Andres Island, Colombia

Problem



Solution





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