



# the economic background to payments for environmental services

regional workshop on  
Payments for Environmental Services  
3-5 April 2008, Hanoi, Viet Nam





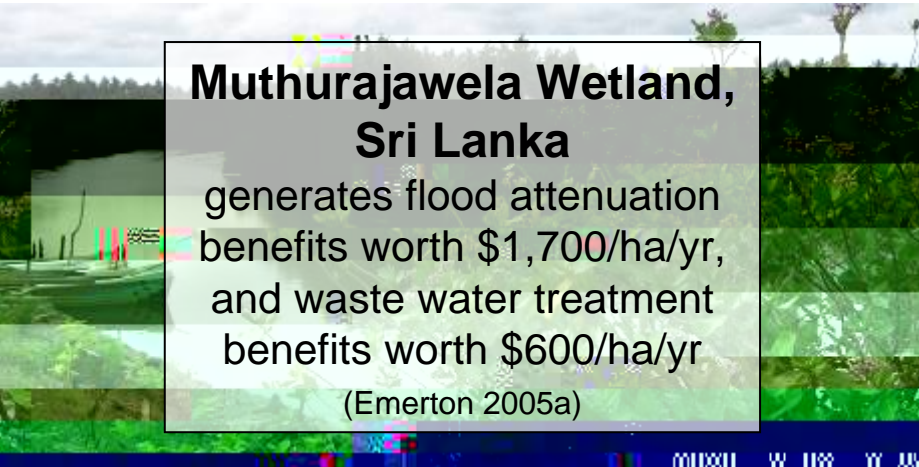
# why ecosystem values matter

# ecosystem services and human wellbeing





# economic values of ecosystem services



## Muthurajawela Wetland, Sri Lanka

generates flood attenuation benefits worth \$1,700/ha/yr, and waste water treatment benefits worth \$600/ha/yr

(Emerton 2005a)



## Caribbean coral reefs

value for shoreline protection ranges between \$2,000 - \$1 million/km, depending on population

(WRI 2005)



## Balochistan mangroves, Pakistan

provide nursery and breeding habitat on which half of off-shore commercial fish stocks depend, worth \$900/ha/yr

(Baig & Iftikhar 2007)



## Bokor National Park, Cambodia

forest watershed catchment protection saves \$2 million for downstream Kamchay Hydropower Scheme

(Emerton 2005b)

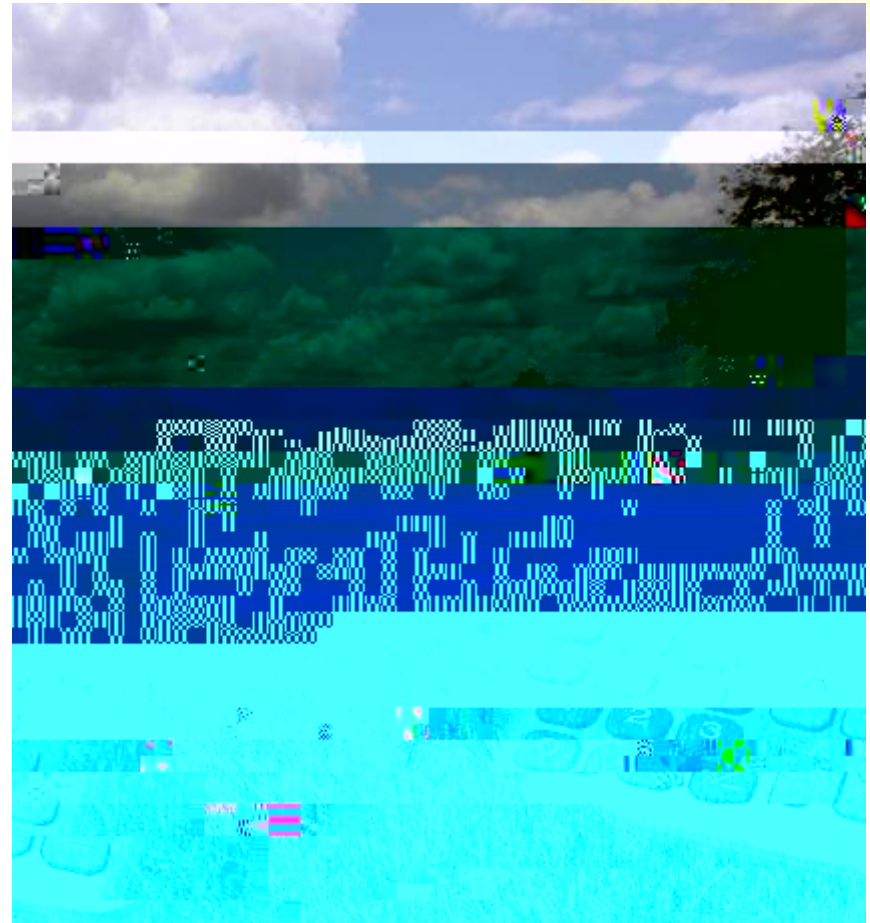






## how under-valuation is a problem

- ecosystem costs and benefits tend to be underpriced by the market, or not have any market price at all
- yet it is often these goods and services that are the most valuable
- as a result, ecosystem conservation is seen as having little economic benefit, and ecosystem degradation is seen as having little economic cost





## why distribution matters

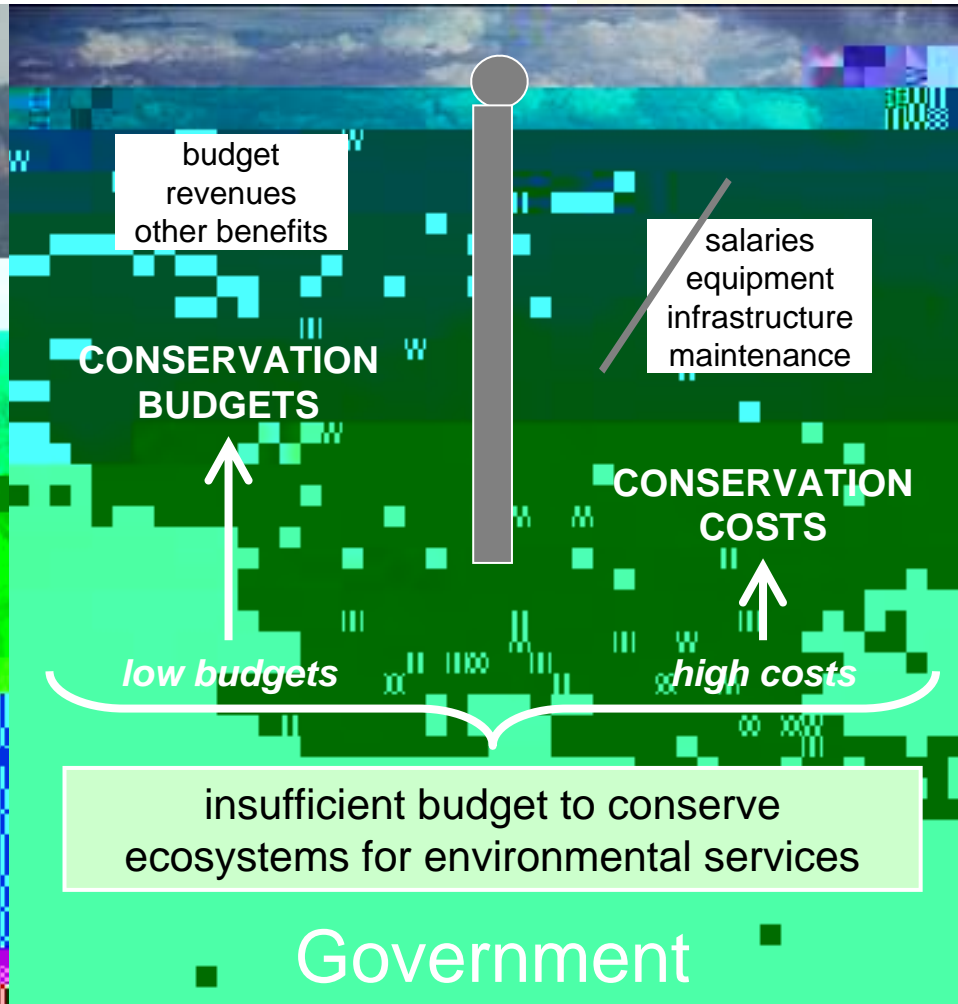
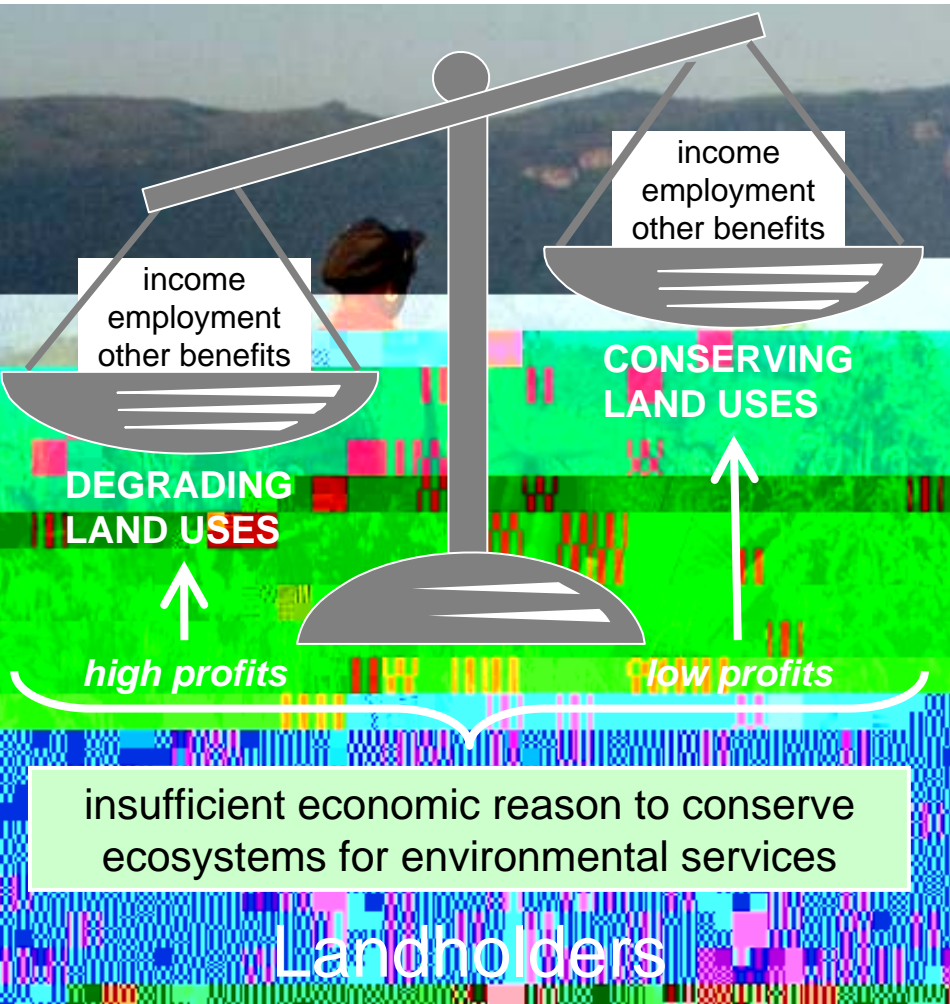
# where costs & benefits don't balance



- those who benefit most from ecosystem conservation typically receive these values free, or at very low cost (*e.g. urban, industrial and commercial consumers*)
- those who are responsible for ecosystem conservation typically gain very little reward or return on their actions (*e.g. government agencies and local communities*)
- yet conservation cost-bearers are often those who are least able to afford to bear them (*e.g. because of poverty and low budgets*)



# where costs & benefits don't balance

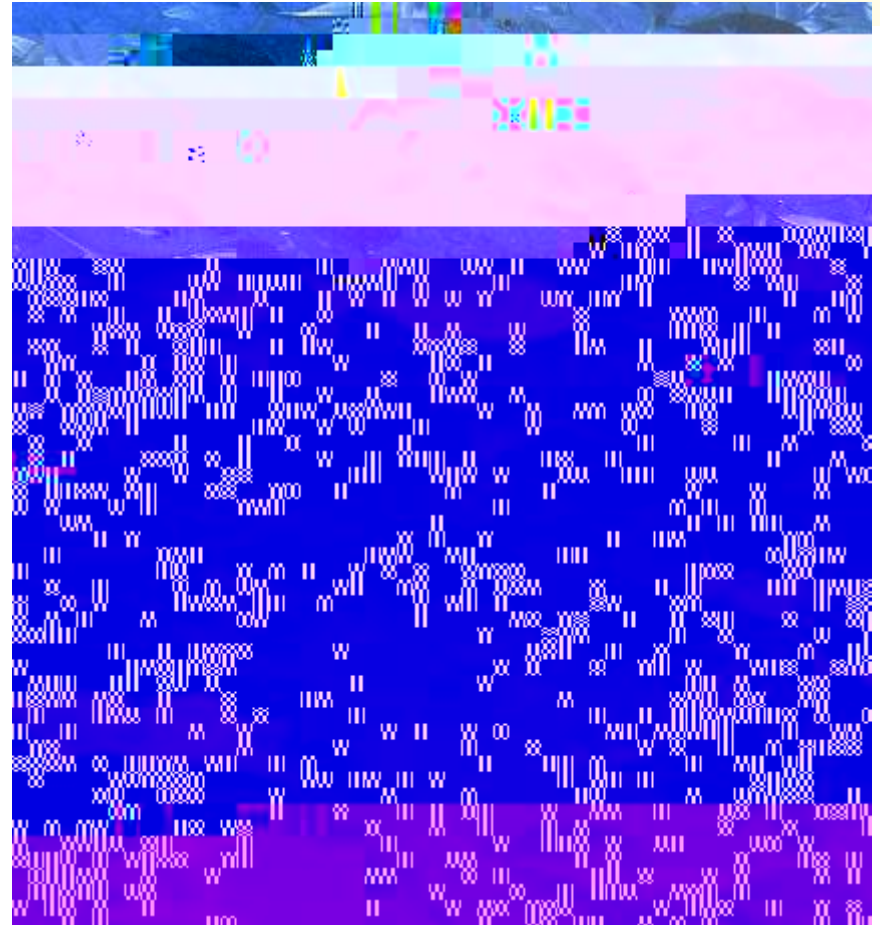




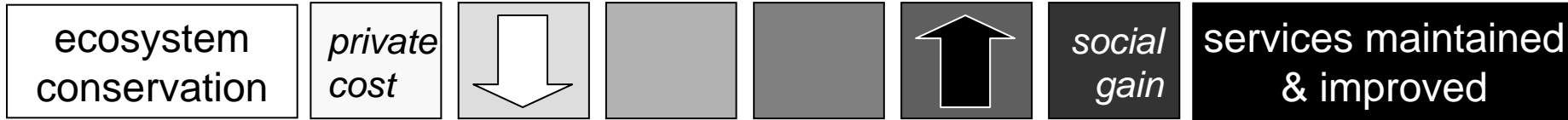
# where social and private values diverge



- what is most beneficial from a social viewpoint is unprofitable in private terms, and vice versa
- conservation to generate ecosystem services may be the best option from a social point of view
- but from a private point of view (for land and resource managers) it is often the least profitable or most costly option



# where social and private values diverge



## ecosystems

for example:  
 forests  
 wetlands  
 coral reefs  
 mangroves  
 ... etc ...



## services

for example:  
 clean & regular water supply  
 flood mitigation  
 fisheries productivity  
 protection against storms  
 carbon sequestration  
 ... etc ...





# how policies, prices and markets fail



- policies, prices and markets shape people's economic behaviour
- sometimes they are distorted or fail, and send the “wrong” private signals as to the “real” social costs and benefits of different economic activities
- they result in a situation where people are encouraged to produce and consume in ways which give rise to high social losses and costs
- ... such as degrading ecosystems

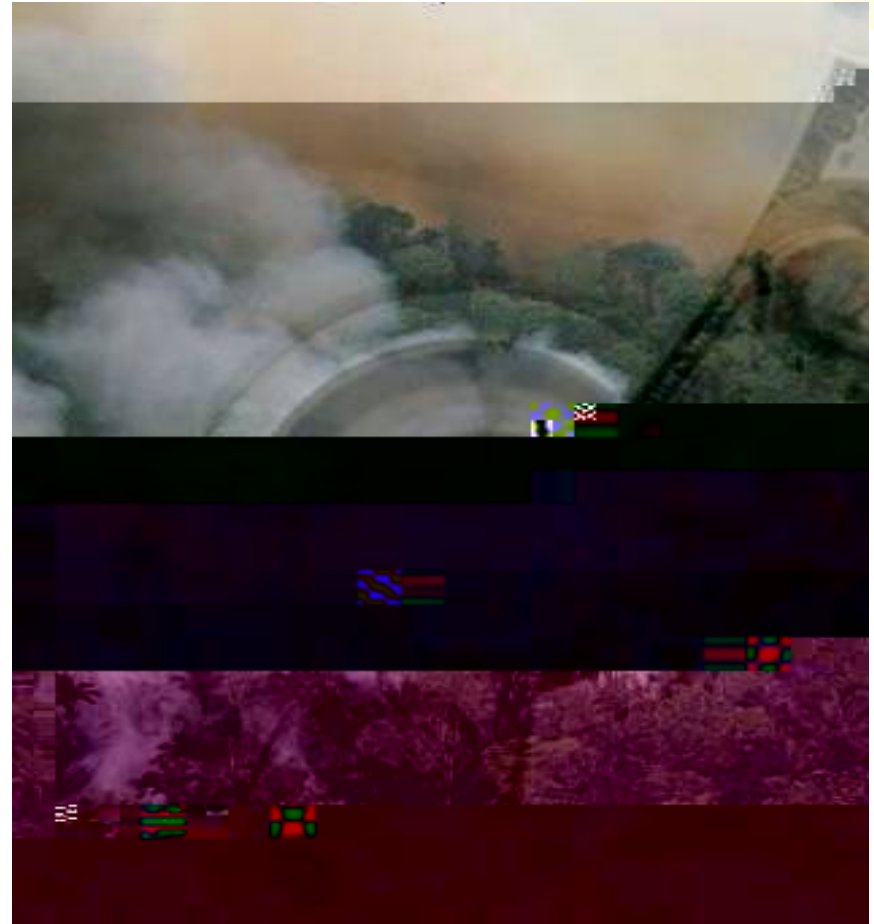




# examples of policy, price and market failures



- relatively higher taxes on sustainable land uses, resources and inputs
- “perverse” subsidies to environmentally degrading land uses
- price support to unsustainable products and supply chains
- lack of markets, credit and value-added for sustainable land and resource uses
- lack of realistic environmental penalties and fines





how economic and financial instruments can be used to address the causes of ecosystem degradation

# responses to ecosystem loss



provide concrete and

**regulation**  
dictate particular behaviour

**mitigation**  
remedy, reverse or  
replace lost services

**incentives**  
direct financial or economic  
reward from conservation







# payments for environmental services as market-based incentives for ecosystem conservation







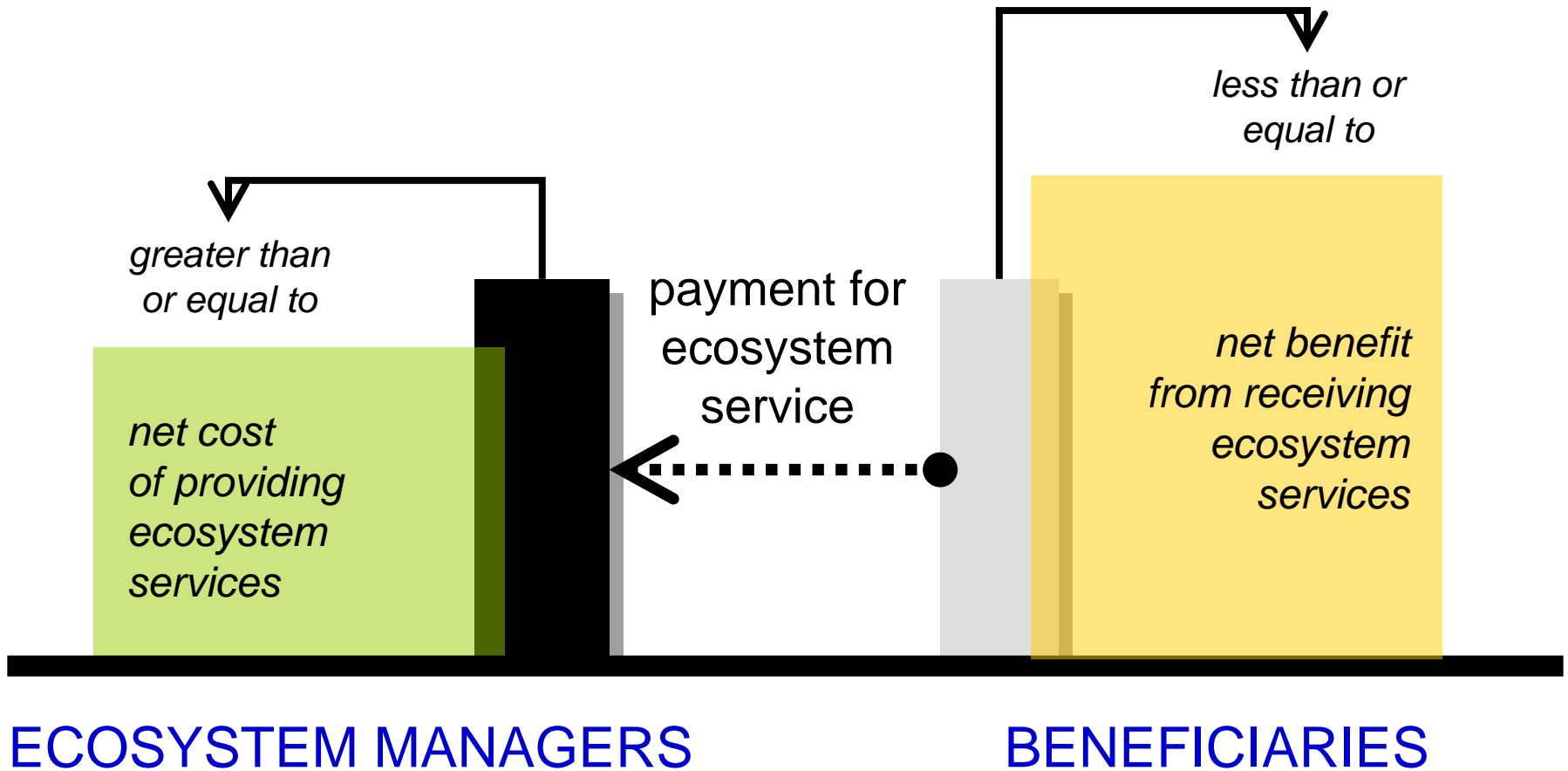
# Closing the economic gap



*reduced income*  
*conservation*



# PES as a conservation incentive



- in principle PES are applicable to any ecosystem which generates economically valuable services for which people are willing to pay
- in practice their use has been limited mainly to forest water services and to a lesser extent carbon, primarily in the Americas and Europe



