

An aerial photograph of a green field with a winding path and a large dollar sign. The path is a light brown color, and the dollar sign is a darker brown color. The text is overlaid on the image.

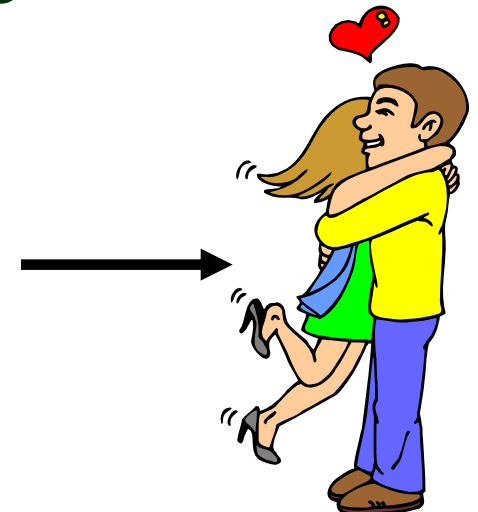
The Economics of Ecosystem Services

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“Academic disciplines are often separated by gulfs of mutual incomprehension, but the deepest and widest may be the one that separates most economists from most environmentalists....

What underlies this is not so much disagreements about facts as disagreement about how to think.”

(Economist, 2002)



How is economics relevant?

1. Address the economic **drivers** of ecosystem service losses
2. Understand the economic **impacts** of degradation of ecosystem services
3. Change behaviour using economic **instruments** to maintain the supply of ecosystem services



1. Drivers – What is causing ES losses?

- ★ Market failure influences human behaviour
 - Public goods
 - Weak property rights
 - Externalities
 - Imperfect information
 - Inappropriate policies



Example - Tropical Forests

- ★ Large global benefits
- ★ No mechanism to compensate
- ★ No incentive to take account of benefits to others
- ★ Tendency to free-ride

⇒ Unsustainable use of forest



Limitations - Moving beyond carrots and sticks...

- * Need to take on board emerging insights from behavioural- and neuro-economics

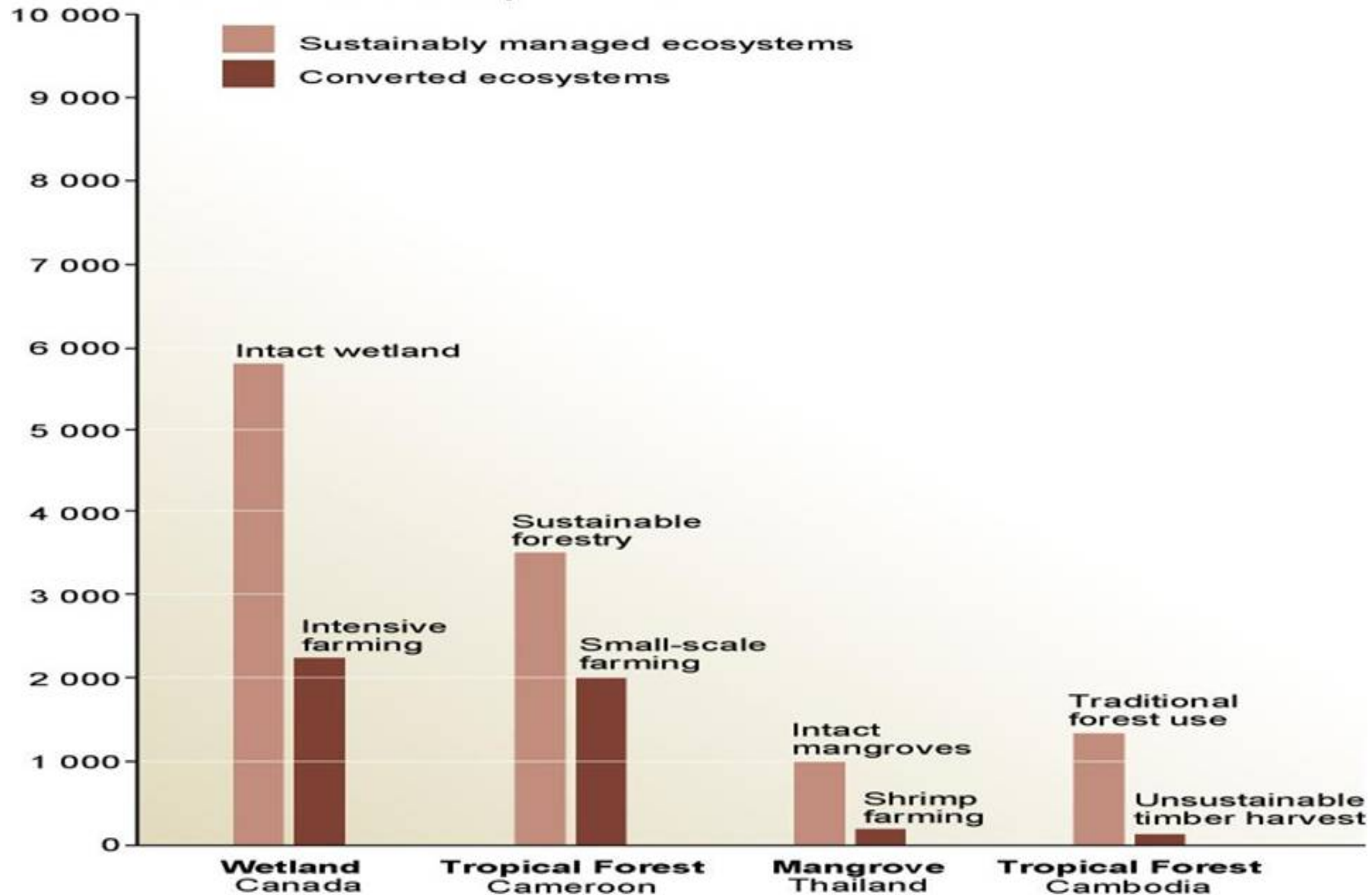


2. Impacts – What is the value of ecosystem services?

- ★ Markets do not exist for most ecosystem services \Rightarrow no price to reflect value.
- ★ Economists therefore estimate ‘utilitarian’ values of ecosystem services.
 - Economic valuation
 - Green GDP



Net Present Value in dollars per hectare



Source: Millennium Ecosystem Assessment

Limitations – Not the golden bullet!

- ★ Not all ecosystem services easy to value
- ★ Economics not well suited to deal with:
 - Large-scale, long-term issues
 - Ecosystem limits and irreversible thresholds
 - Intrinsic values
- ★ Biggest challenge in valuation is often ecological understanding.



3. Instruments – How to encourage ES provision?

- ★ Taxes and subsidies
- ★ User fees
- ★ Tradable permits
- ★ Payments for ecosystem services
- ★ Markets for ecosystem services
- ★ Certification schemes
- ★ Environmental damage liability



Limitations – Require care!

- ★ Need to set appropriate limits for market mechanisms e.g. EU ETS
- ★ Require ability and motivation to pay
- ★ Require strong regulatory and institutional frameworks



Thanks

