


**The Economics of Ecosystems & Biodiversity**










## Recognising the value of protected areas

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**Conference "Nature Conservation beyond 2010"**  
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UNEP

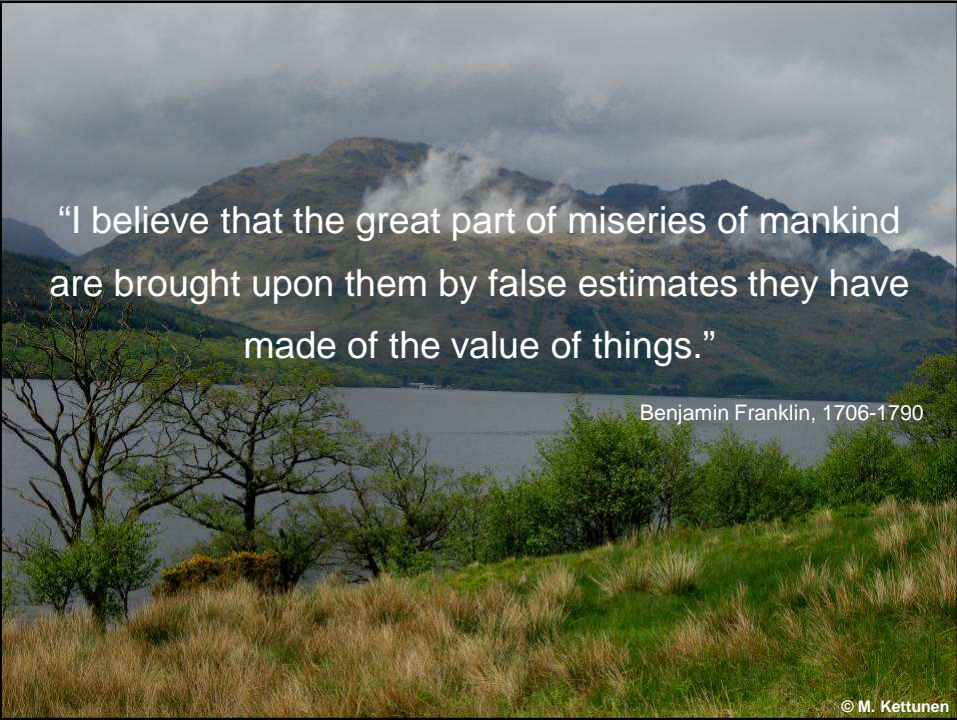
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Institute for  
European  
Environmental  
Policy




"I believe that the great part of miseries of mankind  
are brought upon them by false estimates they have  
made of the value of things."

Benjamin Franklin, 1706-1790


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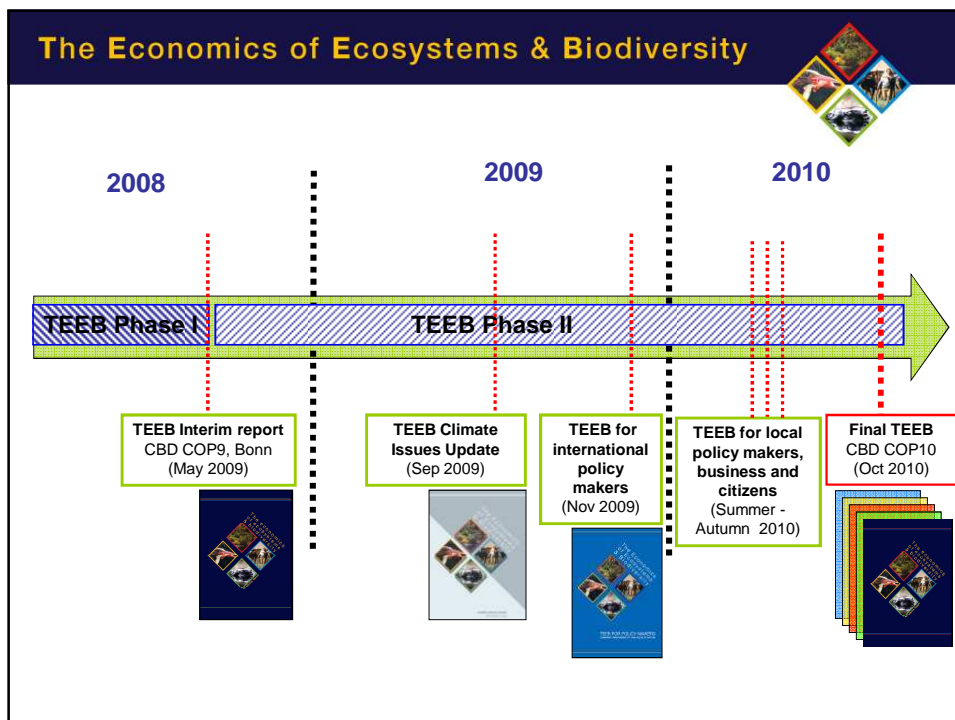


### TEEB initiative (2008-2010): assessing the value of biodiversity & ecosystem services

- Demonstrate **biodiversity, ecosystems & their services have multiple values** – to economy, society, business & individuals
- Underline the urgency of action – highlight the **benefits** (vs. costs) of action
- Show how to assess the value of bb and ES – and how it can be used
- Show how to integrate these values into everyday decision-making



G8 2007  
Environment Ministers Meeting  
Potsdam, 15-17 March 2007





There are already over 120,000 designated protected areas covering around 13.9% of the Earth's land surface.

Marine protected areas still cover 5.9% of territorial seas and 0.5% of the high seas - but they are also increasing rapidly in number and area.

- Coad et al. 2009 -



## Benefits from protected areas: water

- 1/3 of the world's 100 largest cities draw a large part of their drinking water from PAs.
- PAs & forests purify water for NY city = US\$ 6 billion (total) savings in water treatment costs
- Venezuela's national PA system prevents sedimentation that would reduce farm earnings by around US\$ 3.5 million/year.



Copyright: Matthew Bowden. URL: <http://www.sxc.hu/photo/174332>

Dudley and Stolton 2003, Pabon-Zamora et al. 2009

## Benefits from protected areas: climate regulation

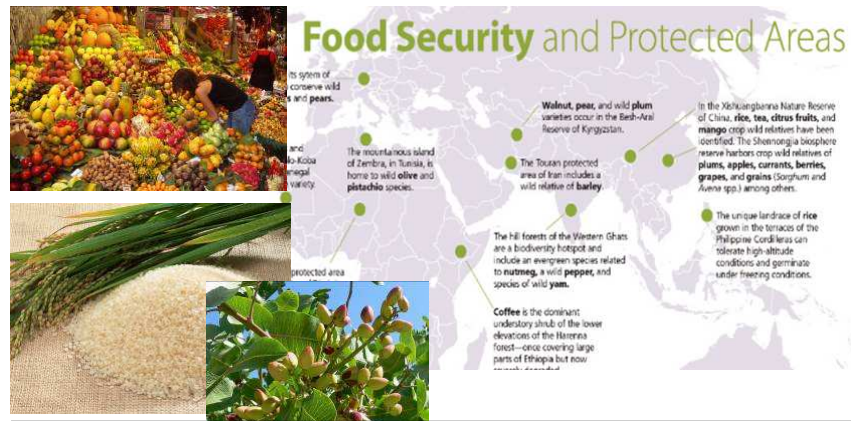


Source: Getty Images - PhotoDisc®

- Mitigation: 15% of global terrestrial carbon stock is contained in PAs
- Adaptation: PAs can reduce climate change induced risks of landslides, floods and storms by stabilising soil, providing space for floodwaters to disperse, blocking storm surges.

Campbell et al. 2008

## Benefits from protected areas: food security



In situ conservation of crop wild relatives provides fresh crop breeding material & helps to maintain food security

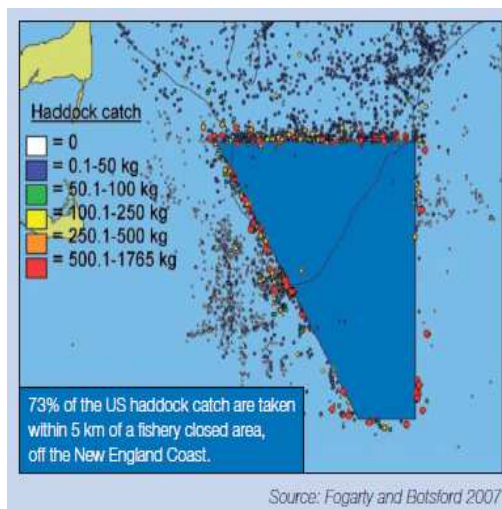
© Map: Conservation Magazine 2008 (9/4), Pictures: www.buyorganic.com.au, www.preparednesspro.wordpress.com/2009/04/, http://upload.wikimedia.org

## Benefits from protected areas: food security

Marine Protected Areas (MPAs) can support the recovery of fish stocks.

*A review of 112 studies in 80 MPAs: fish populations, size & biomass all dramatically increased inside reserves, allowing spill-over to nearby fishing grounds.* (Halpern 2003)

Note: Need to address short-term costs of restricted access before long-term benefits arise



### Benefits from protected areas: employment

- **Bolivia** - PA tourism generates over 20,000 jobs, indirectly supporting over 100,000 people.
- **New Zealand** (the west coast of South Island) – in 2004 PAs provided 15% of total jobs and created 10% of total spending in the region.
- **Finland**: 1 EUR investment in national parks & key recreational areas provides 20 EUR return.
- **Sweden**: Visitor spending in Fulufjället National Park & surrounding areas ~EUR 180 000 / year (2003)

Butcher Partners 2005, Pabon-Zamora et al. 2009, Metsähallitus & Metla 2009, Fredmand et al. 2005

### Benefits from protected areas: livelihoods & poverty reduction



- 1/6 of the world's population depend on protected areas for a significant percentage of their livelihoods (UN Millennium Project 2005)
- PAs provide: game, fish, wild plants, construction material, fuel, "natural" protection towards environmental risks, revenue from tourism ...

(c) Wikimedia commons: M. Boulgakova, Guardian

## Costs related to protected areas

- PA management costs
- Loss of access to resources
- Foregone opportunities
- Human-wildlife conflict
- Displacement



<http://www.sacred-destinations.com>



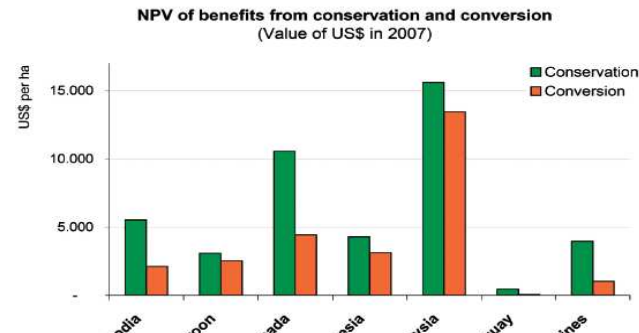
## Globally & nationally: benefits > costs

- **Globally** - PA network covering 15% of the land and 30% of the sea: costs ~US\$ 45 billion / year vs. net benefits ~US\$ 4.4 trillion / year (Balmford et al. 2005)
- **Brazil's Amazon** - benefits from ecosystems within PAs draw three times more money into the state economy than the most likely alternative use (extensive cattle ranching) (Amend et al. 2007)
- **Scotland** - ecosystems protected by Natura 2000 sites provide public three times more benefits than associated **COSTS** (Jacobs 2004)



## Globally & nationally: benefits > costs

Figure 10.2: Total benefits of conservation compared to benefits from conversion for seven case studies in different countries



**Benefits of conservation / sustainable use higher than benefits of land conversion !**

and White et al. (2000), as reviewed by Balmford et al. (2002), Papageorgiou (2008) and Trivedi et al. (2008). 'Conservation' includes sustainable production of market goods and services including timber, fish, non-timber forest products, and tourism. 'Conversion' refers to replacement of the natural ecosystem with a system dedicated to agriculture, aquaculture, or timber production.



### Key problem to solve: distribution of benefits vs. costs

**At global & often national level:** benefits higher than costs

**At local level:**

- Short-term costs often exceed long-term benefits
- Clear / immediate / private returns of land conversion more interesting than long-term benefits

→ Need for policies & mechanisms to equitably share costs and benefits between global - national – local levels.







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### Advocacy for PAs

- Help to communicate / raise political, business & public awareness → increased support to PAs

### Better policies & instruments for PAs

- Distributing benefits & costs of PAs equitably
- Improved / innovative instruments for financing PAs  
(e.g. creating markets via certification / PES schemes / REDD+ )

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### Policy synergies & benefits to all

- PAs & mitigation of / ecosystem-based adaption to climate change
- Food security (e.g. MPAs & fish stock recovery)
- Reducing risks related to natural hazards (e.g. water scarcity)

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**CBD SBSTTA/14 (Nairobi, 1-21 May 2010)**

**Draft recommendations for COP 10: Issues that need greater attention**

*8. Valuing protected area costs and benefits including their ecosystem services*

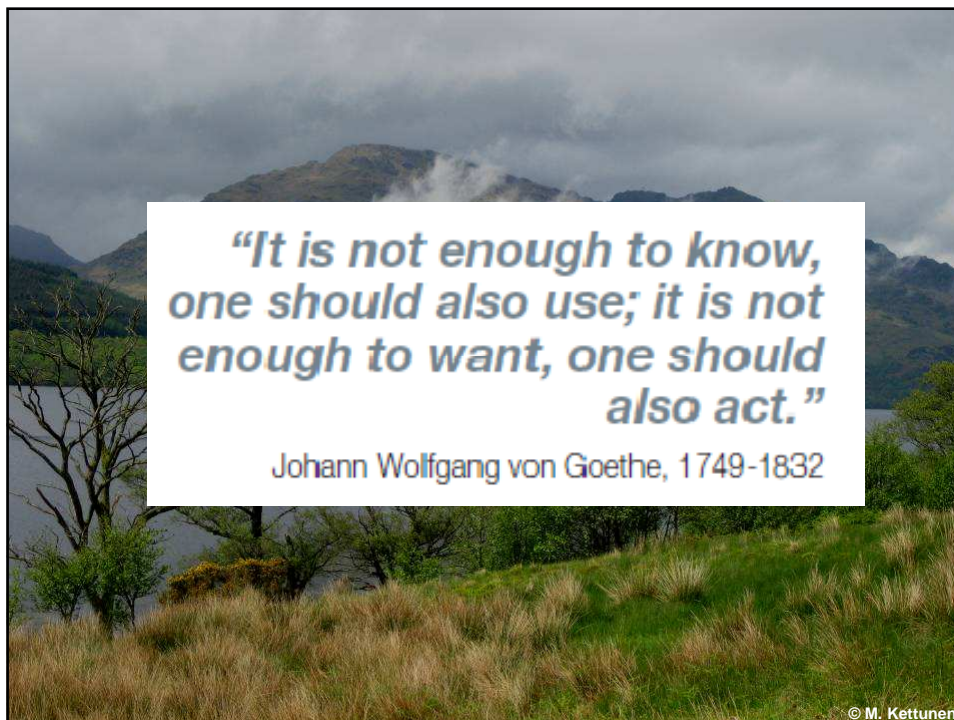
*Requests the Executive Secretary in collaboration with IUCN-WCPA and other partners, including indigenous and local communities, in supporting the programme of work to explore and evaluate existing methodologies for measuring the values, costs and benefits of protected areas, bearing in mind the characteristics of the different biomes and ecosystems, building on existing work including on the findings of The Economics of Ecosystems and Biodiversity (TEEB) study, and disseminate the results of the evaluation for Parties to apply.*

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### Value of protected areas & Estonia?

- Existing information – needs to increase knowledge base (e.g. benefits of Natura 2000)?
- Interesting examples with data / potential examples to focus on in the future (e.g. benefits vs. costs) ?
- Possible policy responses at national level – e.g. national / regional benefit assessment, new instruments to support PAs, awareness raising?



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# Thank you


**Marianne Kettunen**  
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**TEEB for Policy Makers report**  
<http://www.teebweb.org/>


TEEB Contributors include:



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**Disclaimer:** The views expressed in this chapter are purely those of the authors and may not in any circumstances be regarded as stating an official position of the organisations involved.

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**URL:** [www.teebweb.org](http://www.teebweb.org)