

**What is the
Ecosystem approach ?**

What is this?



A water treatment plant

A flood control system

Carbon sink

Water supply

A pollinator

An asset for tourism

Coastal Protection

Fish nursery

**More than resources;
→ Systems**

**More than beasts and bugs;
--> Services**



Consolidated NBSAP guidance

- (g) Take into account **the ecosystem approach**;
- (h) Highlight the **contribution of biodiversity**, including, as appropriate, **ecosystem services, to poverty eradication, national development and human well-being**, as well as the economic, social, cultural, and other values of biodiversity as emphasized in the Convention on Biological Diversity, making use, as appropriate, of the **methodologies and conceptual framework of the Millennium Ecosystem Assessment**;
- (i) **Identify the main threats to biodiversity**, including direct and indirect drivers of biodiversity change, and include actions for addressing the identified threats;

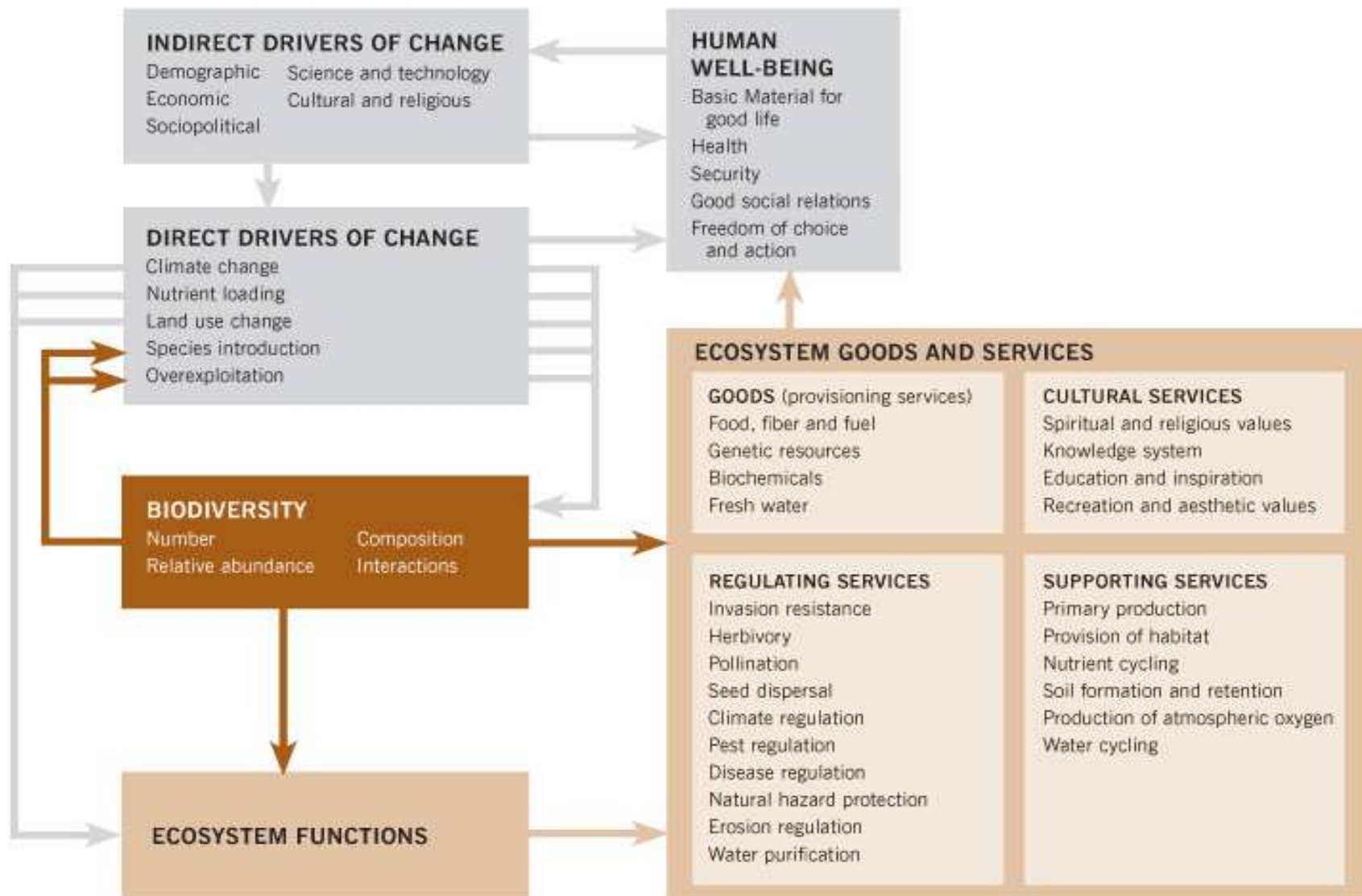
15 of 24 ecosystem services are in decline

Provisioning Services		
Food	crops	↑
	livestock	↑
	capture fisheries	↓
	aquaculture	↑
	wild foods	↓
Fiber	timber	+/-
	cotton, silk	+/-
	wood fuel	↓
Genetic resources		↓
Biochemicals, medicines		↓
Fresh water		↓

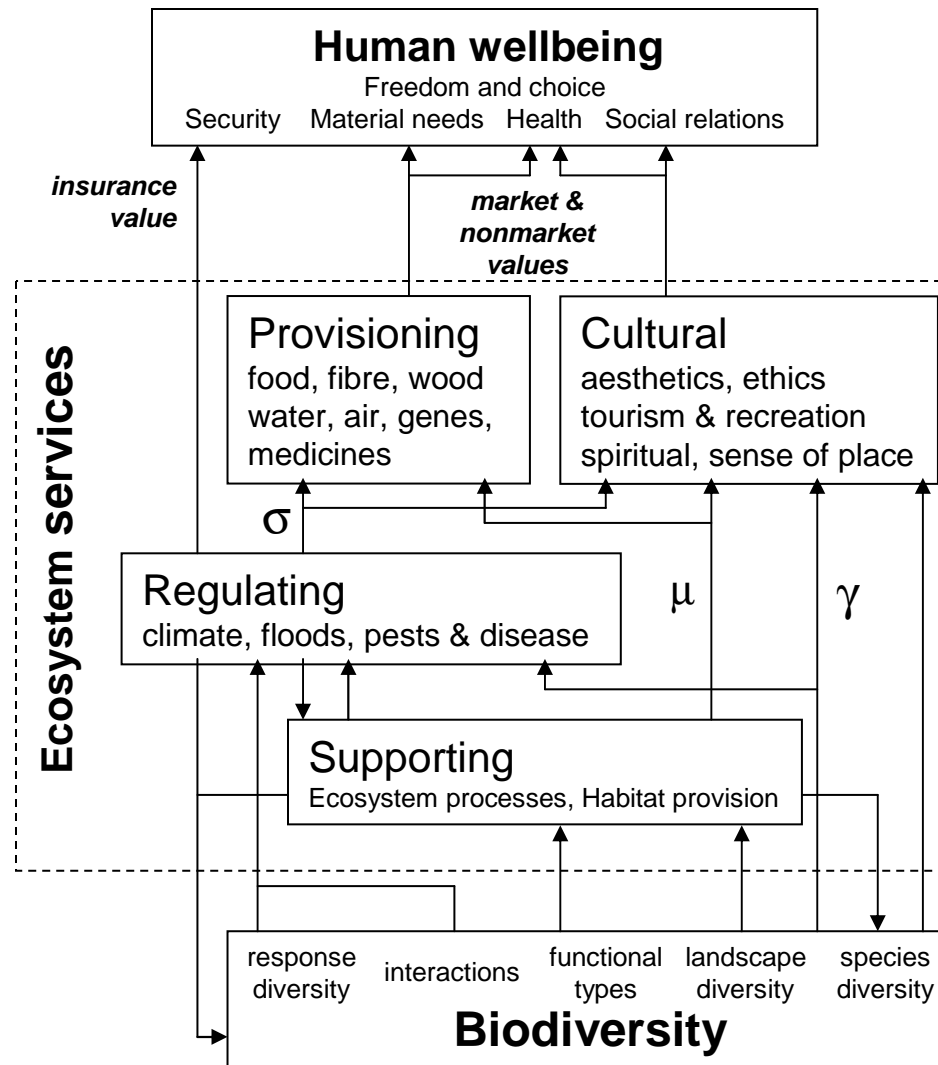
Regulating Services	
Air quality regulation	↓
Climate regulation – global	↑
Climate– regional and local	↓
Water regulation	+/-
Erosion regulation	↓
Water / waste treatment	↓
Disease regulation	+/-
Pest regulation	↓
Pollination	↓
Natural hazard regulation	↓

Cultural Services	
Spiritual / religious values	↓
Aesthetic values	↓
Recreation and ecotourism	+/-

Biodiversity underpins ecosystem functioning and the services that support human well-being



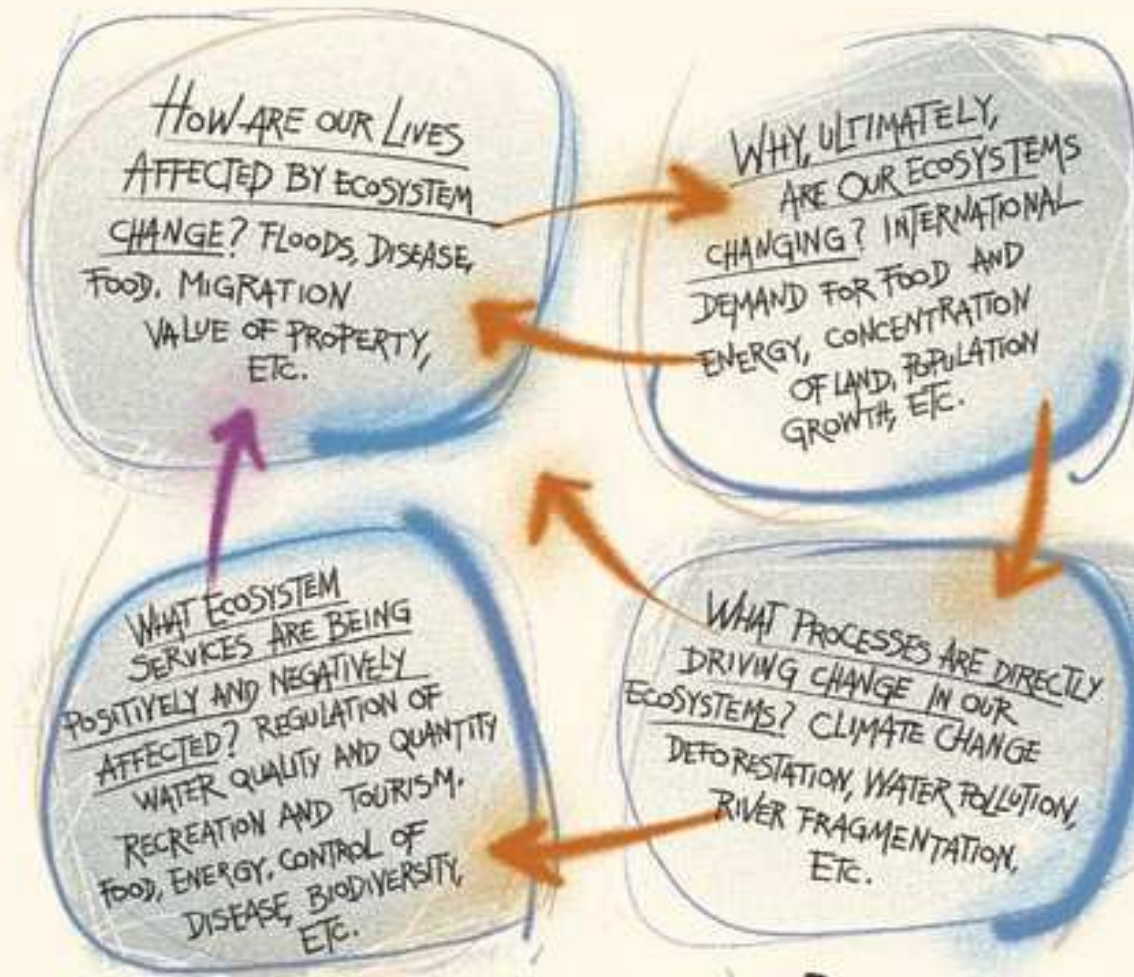
Where does biodiversity fit in?



People impact nature



Nature provides people benefits

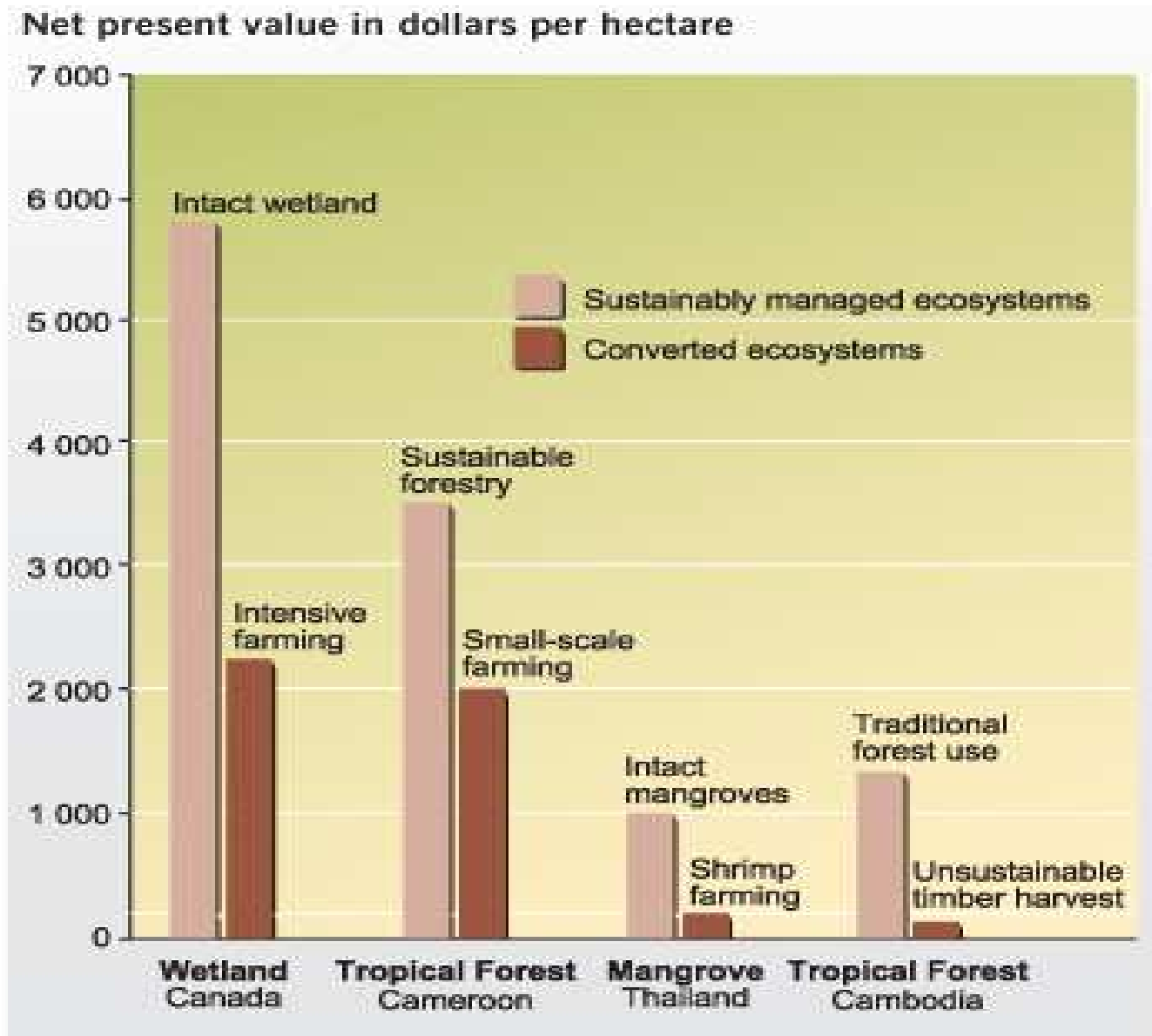


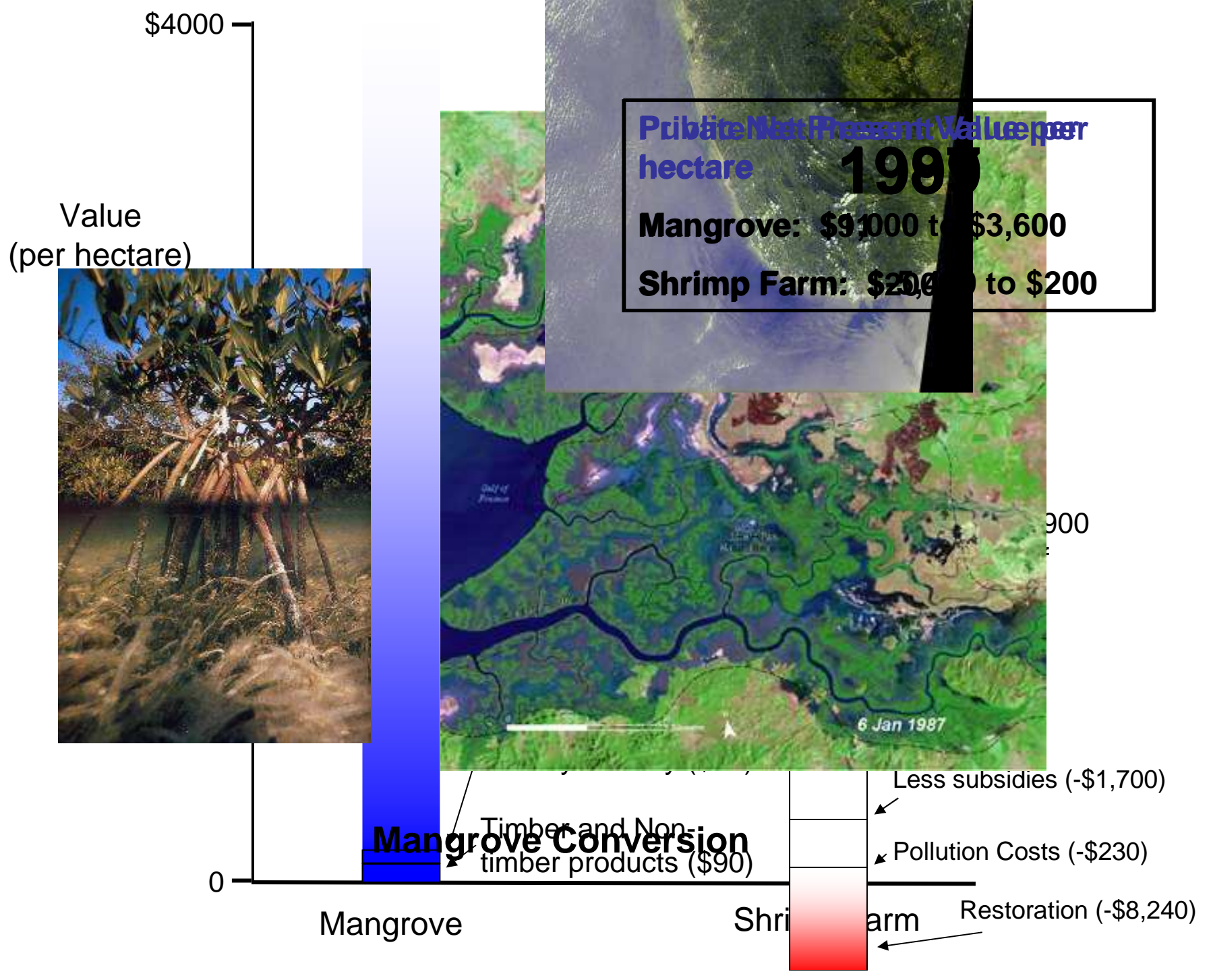
**Integrated
Ecosystem
Assessment**

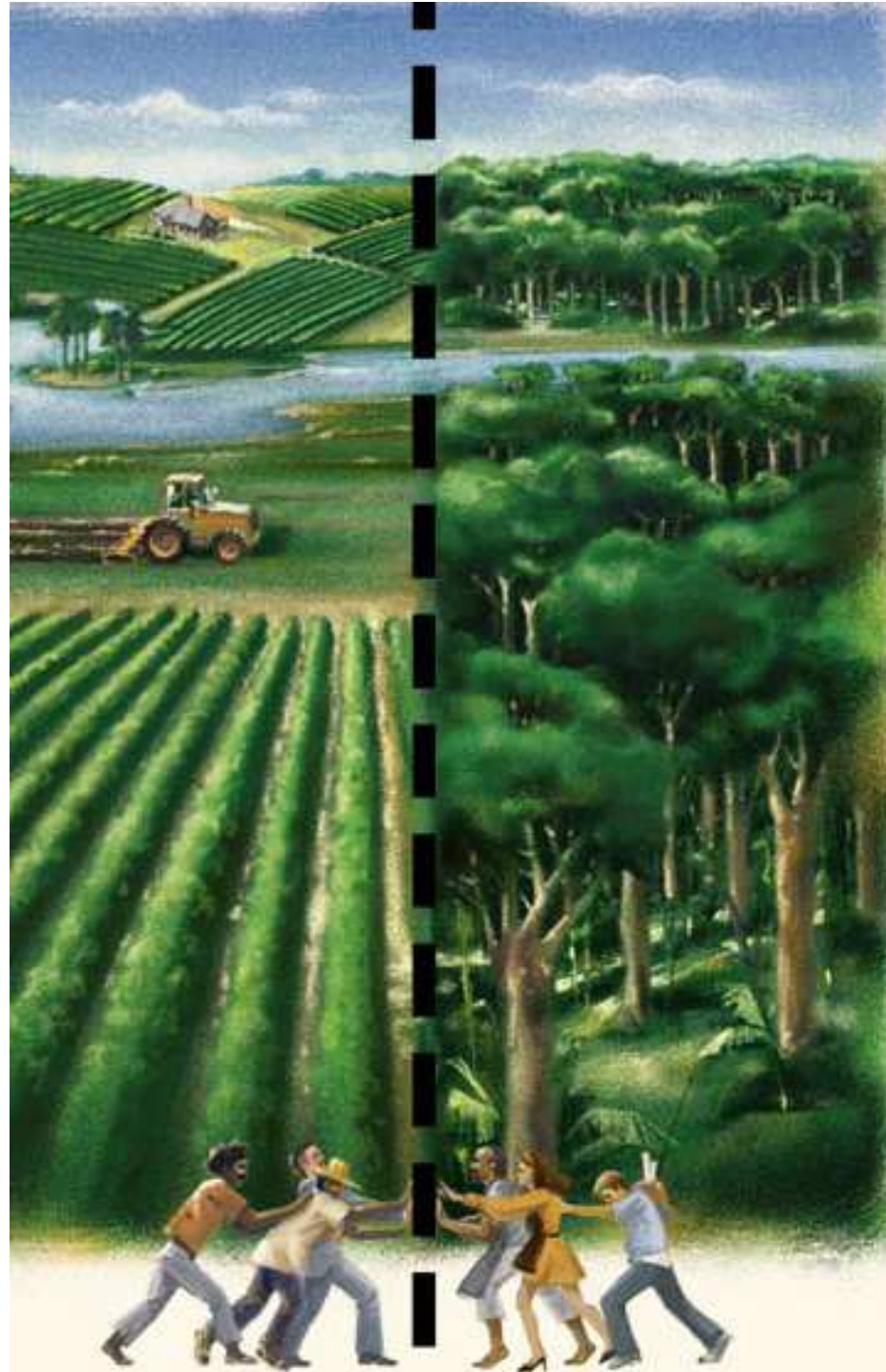


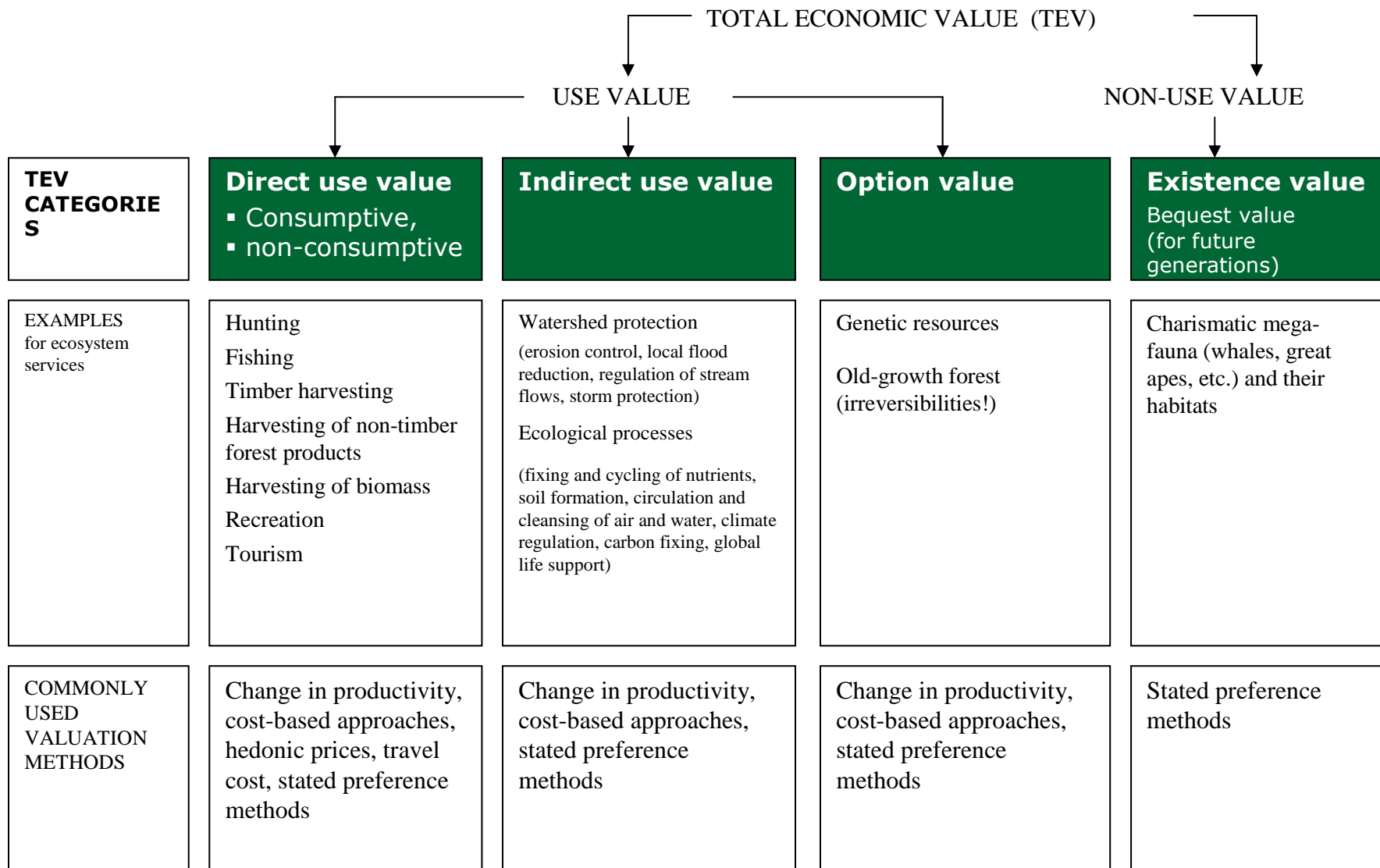
**A social
process**

Intact ecosystems provide economic benefits









TEV captures the different motives for valuing environmental assets

NB: total economic value \neq global value

Valuation of biodiversity / ecosystem services

- Economic valuation \neq commercial value
- Pick the low-hanging fruit: Many valuation techniques are costly and difficult to apply,
But many are not
- Aim to capture the most important ecosystem services – do not try to be comprehensive
- Use simple tools where appropriate
- Consider qualitative/semi-quantitative representations; do not try to monetize everything:
eg: # people, livelihoods dependent on the service

Exercise

Case study:

- Identify case and possible scenarios
- Identify the most important ecosystem services
- Describe status and trends, main threats
- Valuation (Qualitative or semi-quantitative):
 - Benefits – who benefits? (How do ES contribute to local livelihoods and to others, nationally & globally)
 - Costs – who pays for the protection of the ecosystem?
- Intervention (project, policy): mechanisms, institutions, management
- Monitoring & evaluation for adaptive management

Example

Case study:



Development of Cacao production in tropical forest (Cameroon)

Ecosystem service -- and beneficiaries	Intact Forest	Intensive production	Agro- forestry
C sequestration -- global	* * *	0	* *
Forest Services and NWFP -- local & regional	* * *	*	* *
\$ Cacao -- producers & consumers	0	***	* *
\$ other products -- producers & consumers	0	0	* *

Example

Case study:

Fisheries policies

Ecosystem service -- and beneficiaries	Revenue	Livelihoods
Small scale fisheries	\$ \$	
Large scale fisheries	\$ \$ \$ \$ \$	

Principles of the Ecosystem Approach

- 1: The objectives of management of land, water and living resources are a matter of **societal choice**.
- 2: Management should be **decentralized** to the lowest appropriate level.
- 3: Ecosystem managers should **consider** the effects (actual or potential) of their activities on **adjacent and other ecosystems**.
- 4: Recognizing potential gains from management, there is usually a need to understand and **manage the ecosystem in an economic context**. Any such ecosystem-management programme should:
 - (a) Reduce those market distortions that adversely affect biological diversity;
 - (b) Align incentives to promote biodiversity conservation and sustainable use;
 - (c) Internalize costs and benefits in the given ecosystem to the extent feasible.
- 5: **Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach**.
- 6: Ecosystems must be managed **within the limits of their functioning**.
- 7: The ecosystem approach should be undertaken at the **appropriate spatial and temporal scales**.
- 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the **long term**.
- 9: Management must **recognize** that **change** is inevitable.
- 10: The ecosystem approach should seek the appropriate **balance** between, and integration of, **conservation and use** of biological diversity.
- 11: The ecosystem approach should **consider all forms of relevant information**, including scientific and indigenous and local knowledge, innovations and practices.
- 12: The ecosystem approach should involve **all relevant sectors of society** and scientific disciplines

Tasks to apply the Ecosystem Approach

- How do you involve all members of society in decisions associated with the management of land, water and living resources?
- How do you ensure management is decentralised to the lowest appropriate level?
- How do you ensure the effects of management actions (potential or actual) on adjacent and other ecosystems are taken into account?
- How can the economic context be understood so that market distortions that affect biological diversity are reduced, incentives are developed to promote biodiversity and sustainable use, and ecosystem costs and benefits are externalized?
- What measures could be used to conserve ecosystem structure and functioning so as to maintain ecosystem services?
- What measures can be taken to ensure ecosystems are managed within the limits of their functioning?
- What actions can be taken so that the problem(s) is (are) addressed at the appropriate temporal and spatial scales?
- How can varying temporal scales and lag-effects be taken into account when considering the sustainable use of ecosystems?
- How can adaptive management be used to address the problem(s) identified?
- ∴ How can an appropriate balance be sought between, and integration of, conservation and use of biological diversity?
- ∴ How do you ensure all forms of relevant knowledge including, scientific, indigenous and local knowledge, innovations and practices are included?
- ∴ What measures can be taken to facilitate the involvement of all stakeholders including all sectors of society and scientific disciplines?

The essentials

- Objectives a matter of societal choice
- Manage the ecosystem in an economic context, consider distribution of costs and benefits
- Consider all forms of relevant information
- Conserve ecosystem processes and functions, to maintain ecosystem services
- Use adaptive management practices
- Carry out management actions at the appropriate scale, decentralized to lowest appropriate level
- Ensure inter-sectoral cooperation

Ecosystem Approach Toolkit

- <http://www.cbd.int/ecosystem/>
- Ecosystem Approach Principles and Guidance
- Other CBD decisions
- User Guides
- Applications of Ecosystem approach to sectors
- Tools:
 - Stakeholder consultation
 - Conflict management
 - Environmental assessment (SEA and EIA)
 - Valuation
 - Integrated resource management
 - Integrated land use planning
 - Modeling
 - Monitoring