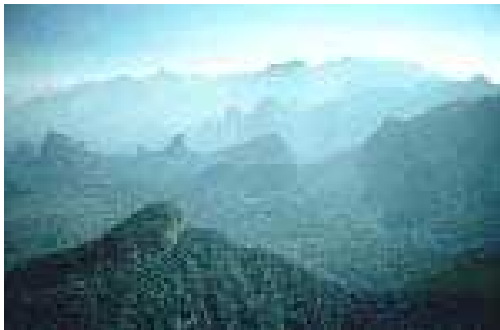


What is this?



A water purification plant

A flood control mechanism

A food production factory

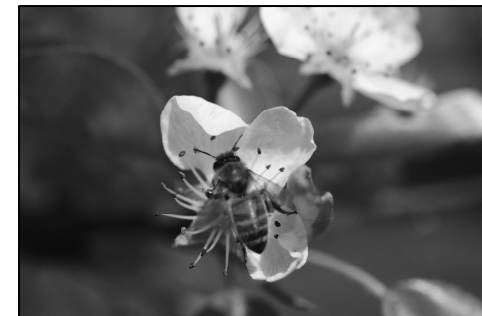
A god

A pollinator

An air conditioner

**More than resources;
→Systems**

**Not just beasts & bugs;
-->Services**



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		↓

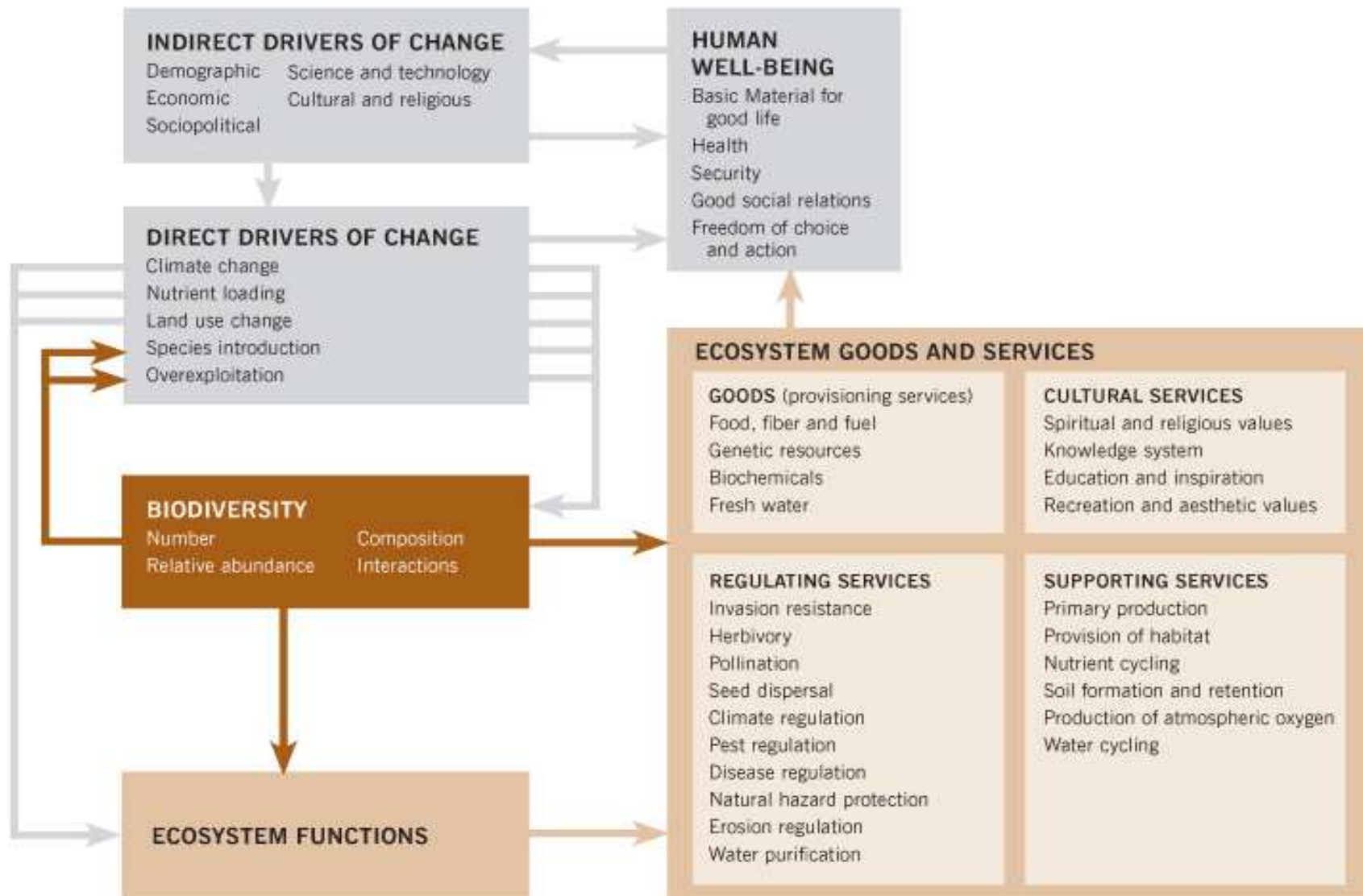
Regulating Services	
Air quality regulation	↓
Climate regulation – global	↑
Climate– regional and local	↓
Water regulation	+/-
Erosion regulation	↓
Water / waste treatment	↓
Disease regulation	+/-
Pest regulation	↓
Pollination	↓
Natural hazard regulation	↓

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

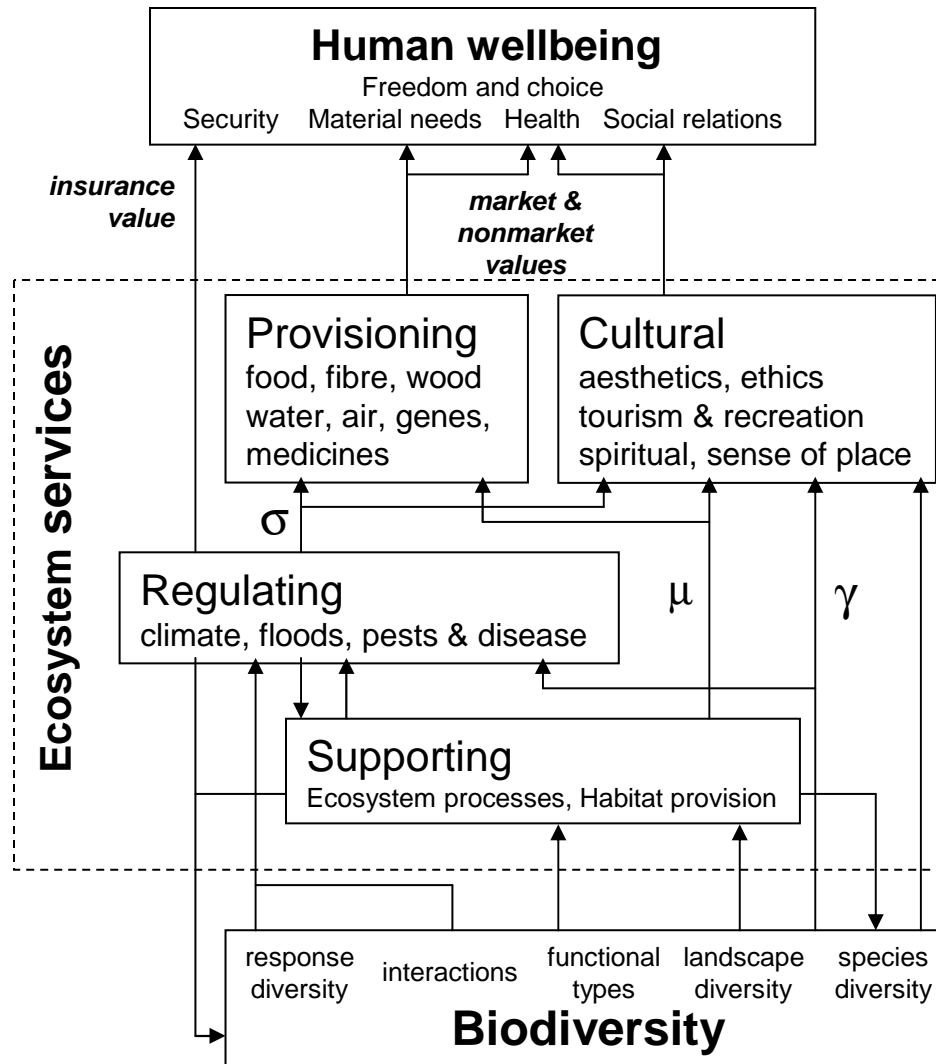
Consolidated NBSAP guidance

- (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;

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



Where does biodiversity fit in?

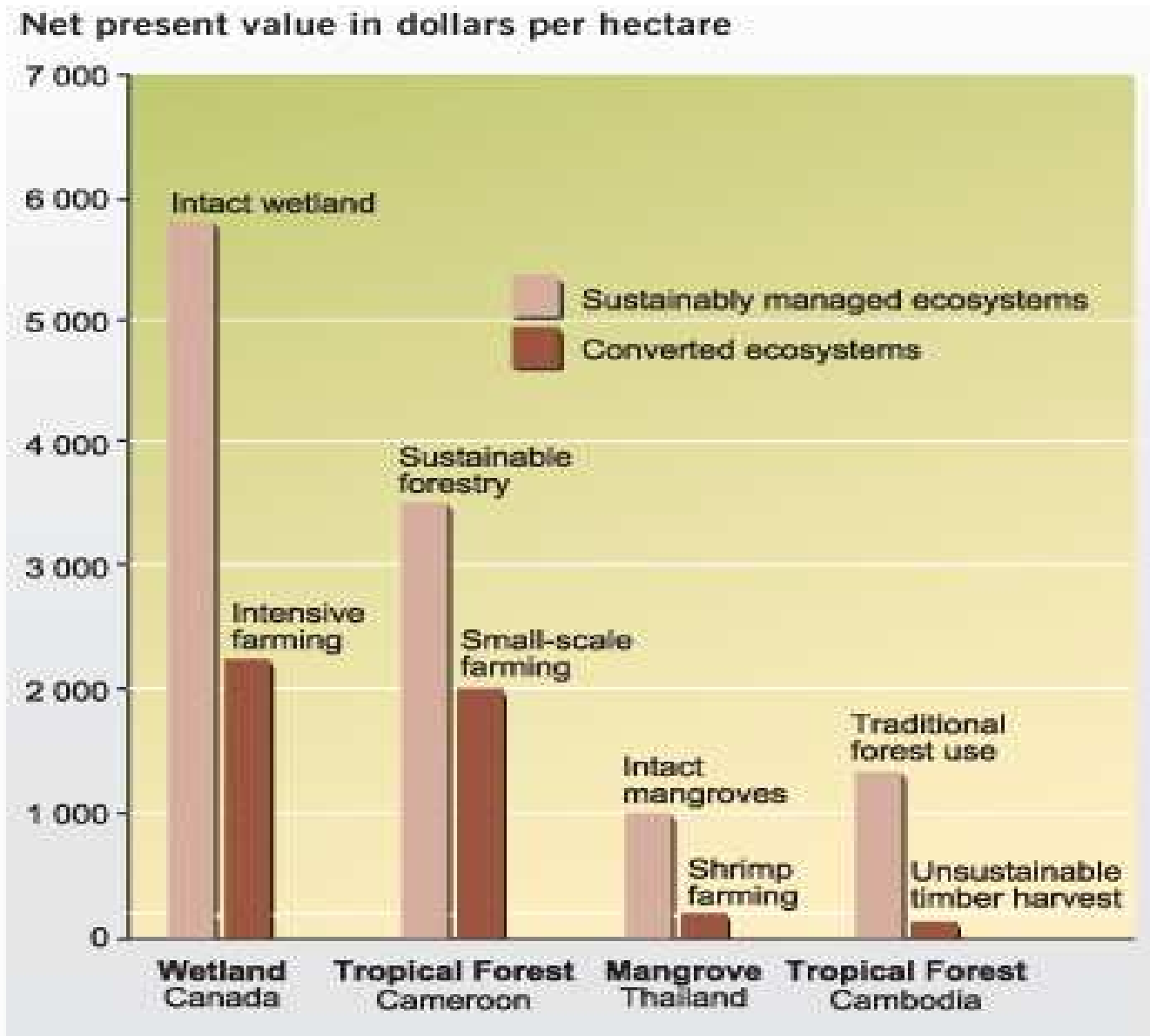


People impact nature

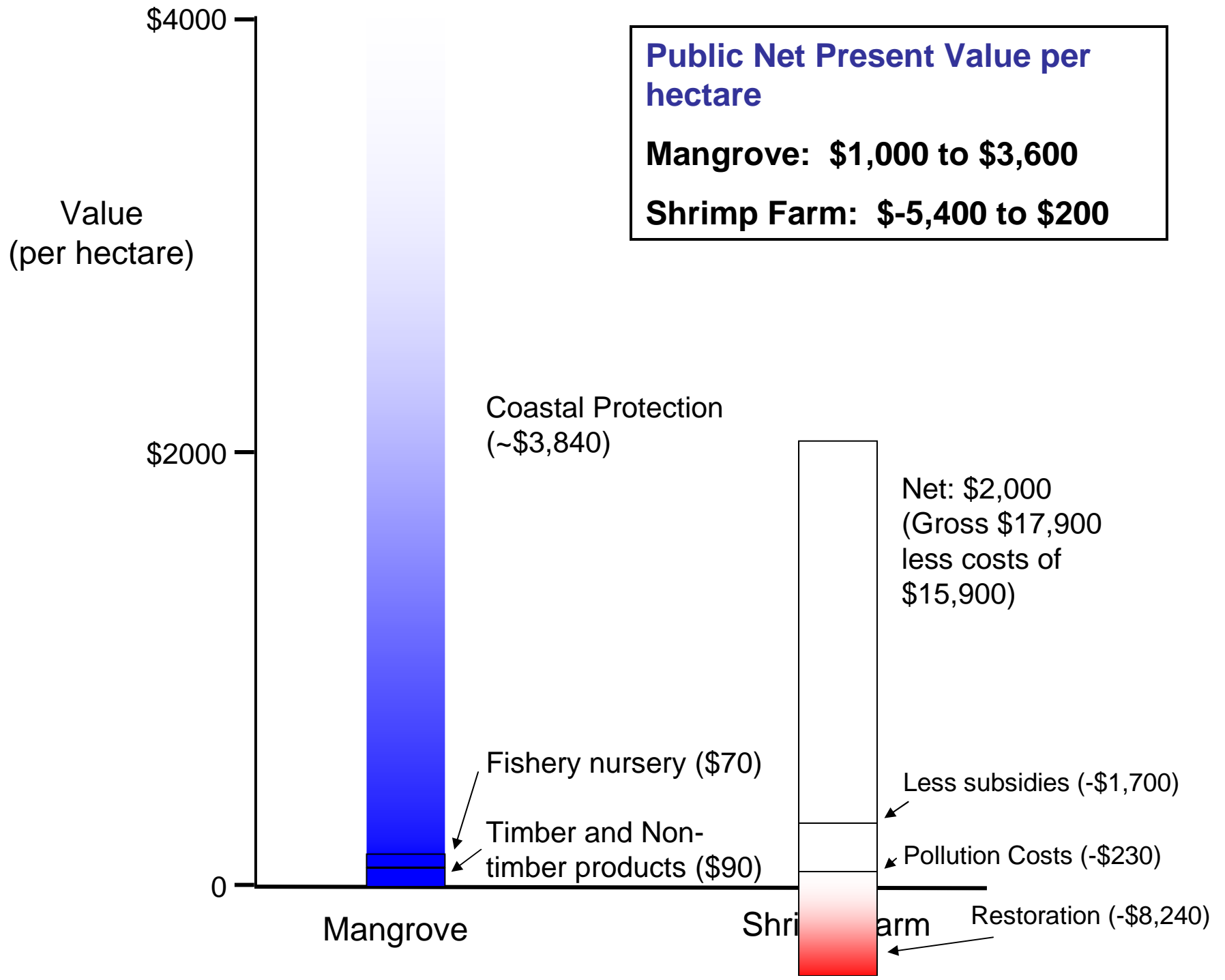


Nature provides people benefits

Les écosystèmes intacts fournies les bénéfices économiques







Public Net Present Value per hectare

Mangrove: \$1,000 to \$3,600

Shrimp Farm: -\$5,400 to \$200

Coastal Protection (~\$3,840)

Net: \$2,000 (Gross \$17,900 less costs of \$15,900)

Fishery nursery (\$70)

Less subsidies (-\$1,700)

Timber and Non-timber products (\$90)

Pollution Costs (-\$230)

Mangrove

Shrimp Farm

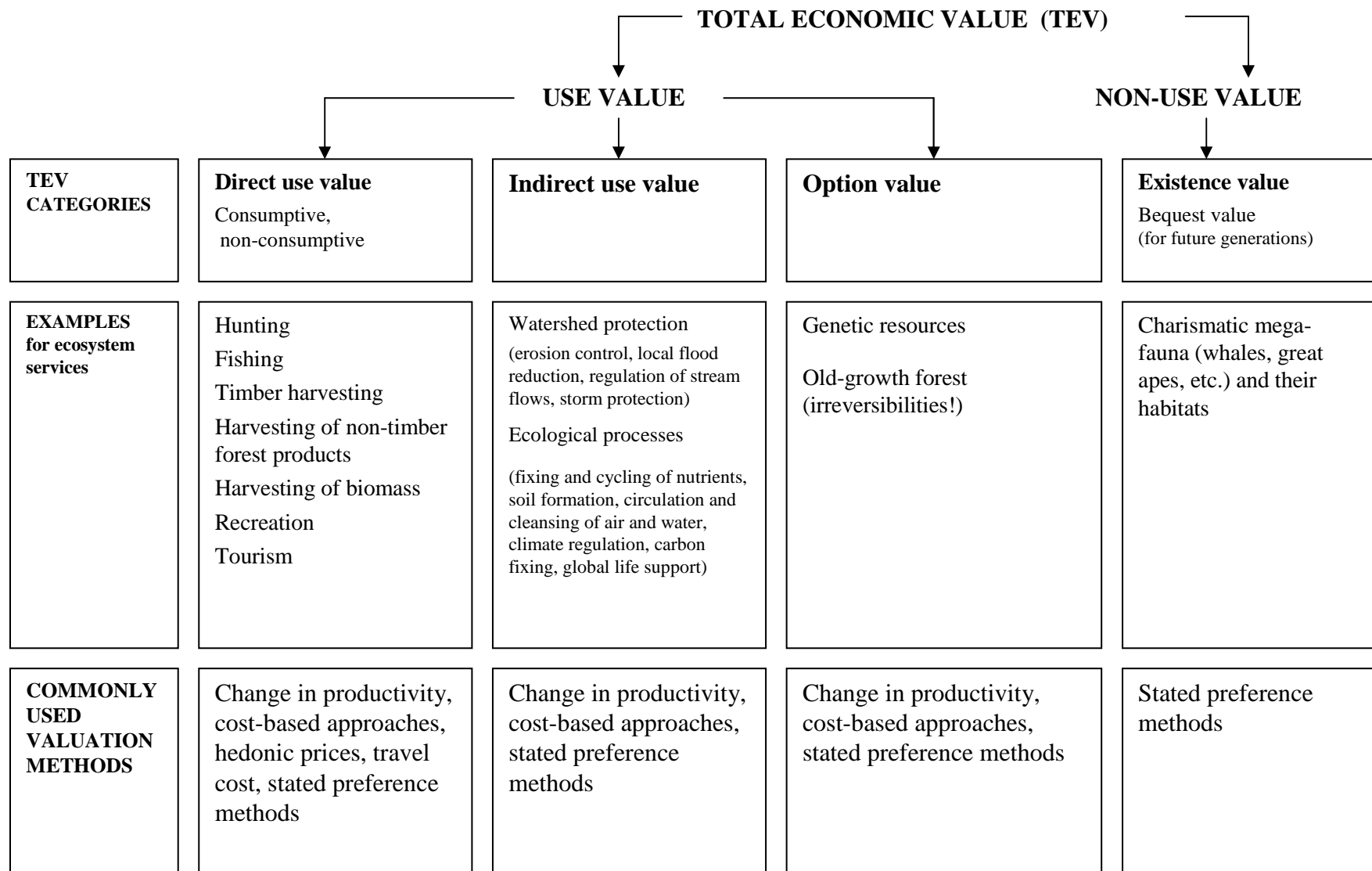
Restoration (-\$8,240)

Value (per hectare)

\$4000

\$2000

0



TEV captures the different motives for valuing environmental assets

NB: total economic value \neq global value

Picking the low-hanging fruit in valuation...

Many valuation tools are costly and time-consuming to apply, and require considerable technical expertise...

- Apply a cost-benefit-criterion to the valuation exercise itself
 - ✓ Aim to capture the most important ecosystem services/elements of TEV in a specific context – do not seek comprehensiveness at all cost
 - ✓ Use simpler tools whenever appropriate
 - ✓ Consider using qualitative/semi-quantitative representations; do not monetize at all cost

Exercise (Field Study Visit)

Case study:

- Identify ecosystem services
- Status and trends
- Main threats
- Benefits – who benefits? (How do ES contribute to local livelihoods and to others, nationally & globally) (Qualitative valuation)
- Costs – who pays for the protection of the ecosystem? (Qualitative valuation)
- Intervention (project, policy): mechanisms, institutions, management
- Monitoring & evaluation for adaptive management

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

Operational guidance

- focus on functional relationships and processes within ecosystems
- enhance benefit sharing
- use adaptive management practices
- carry out management actions at the appropriate scale, decentralized to lowest appropriate level
- ensure inter-sectoral cooperation

Summary

- 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