Sustainability and Environmental Impacts

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CONSERVATION INTERNATIONAL

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vision

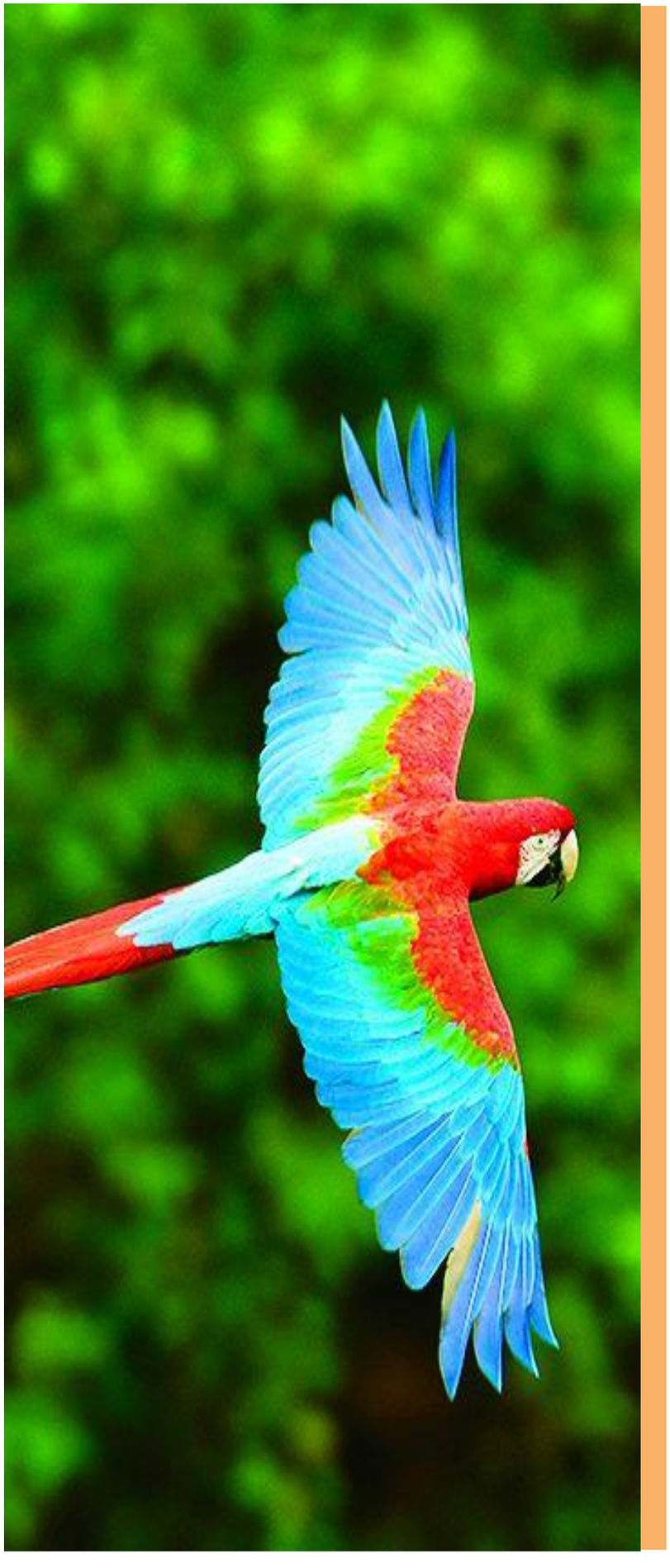
We imagine a healthy prosperous world in which societies are forever committed to caring for and valuing nature for the long-term benefit of people and all life on Earth.

mission

Building upon a strong foundation of science, partnership and field demonstration, CI empowers societies to responsibly and sustainably care for nature for the well-being of humanity.

Biodiversity (BD)

Variability in biological systems:
A hierarchy of increasing levels of organization and complexity(gene, individual, population, species, community, ecosystem and biome)

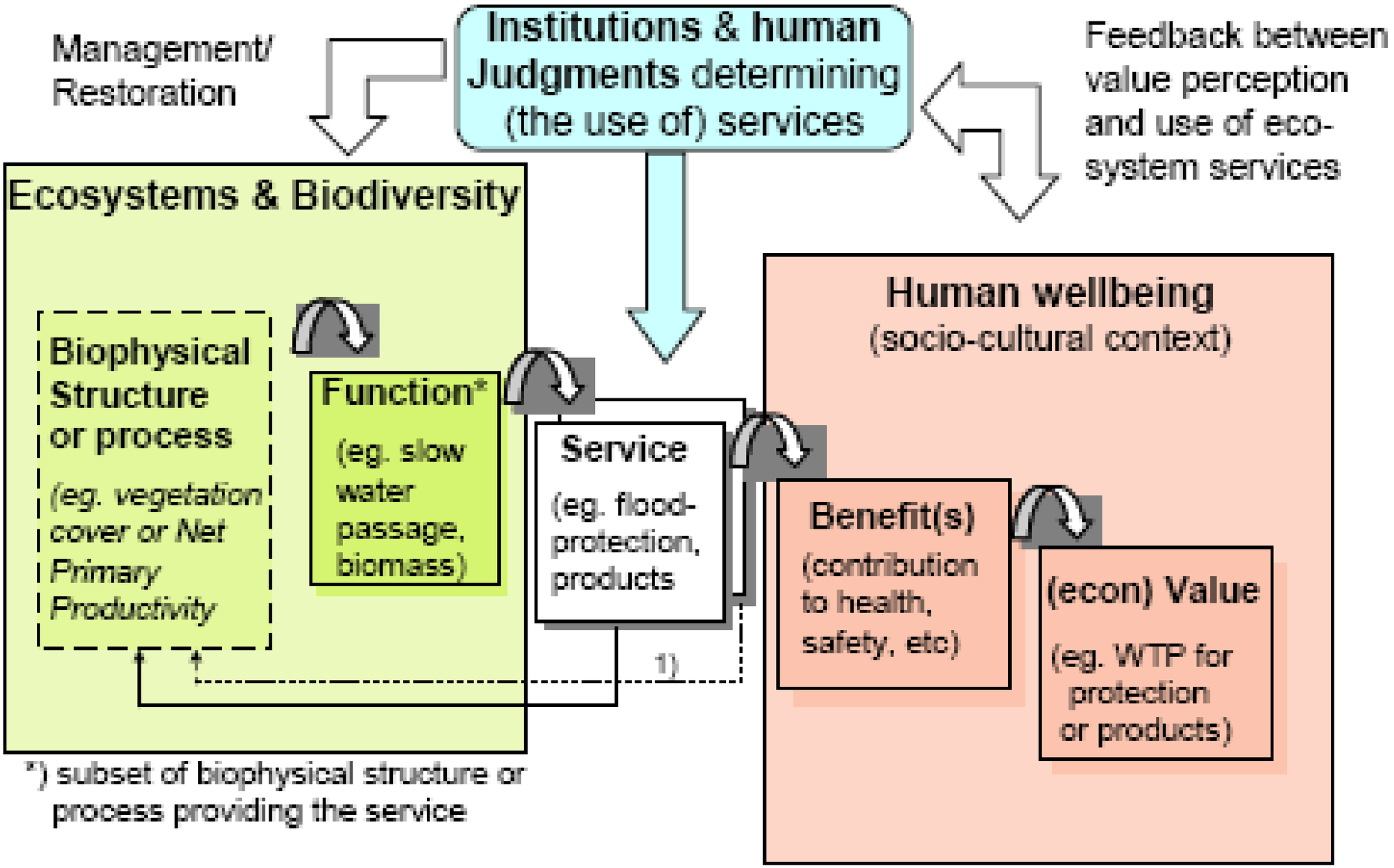


Ecosystem Services (ES)

ES = Benefits that humans derive from nature (MA 2005)

- Almost all ES depend to some extent on biodiversity, though its precise role is variable and often context-dependent and questions remains about the roles of most species

BD & ES v. Human well-being (TEEB 2010)



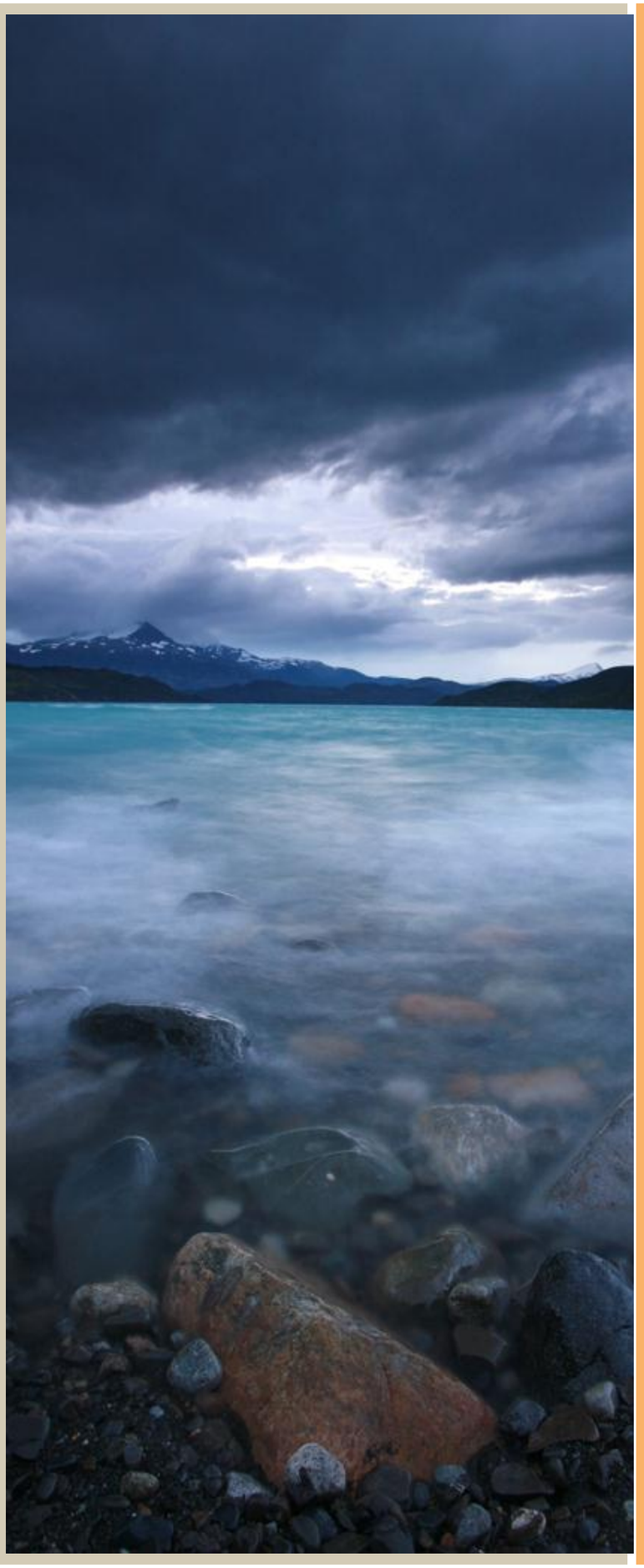
Adapted from Haines-Young & Potschin, 2009 and Maltby (ed.), 2009

Example Industry Goals

Energy Self-sufficiency: understand supplying (transportation, electricity, etc.) and major beneficiaries.

Promote Exports: major markets, requirements, import conditions (import tariffs and quality standards).

Economic Development: generate jobs, income, and revenue. Who are the target beneficiaries.



Challenges

Internal:

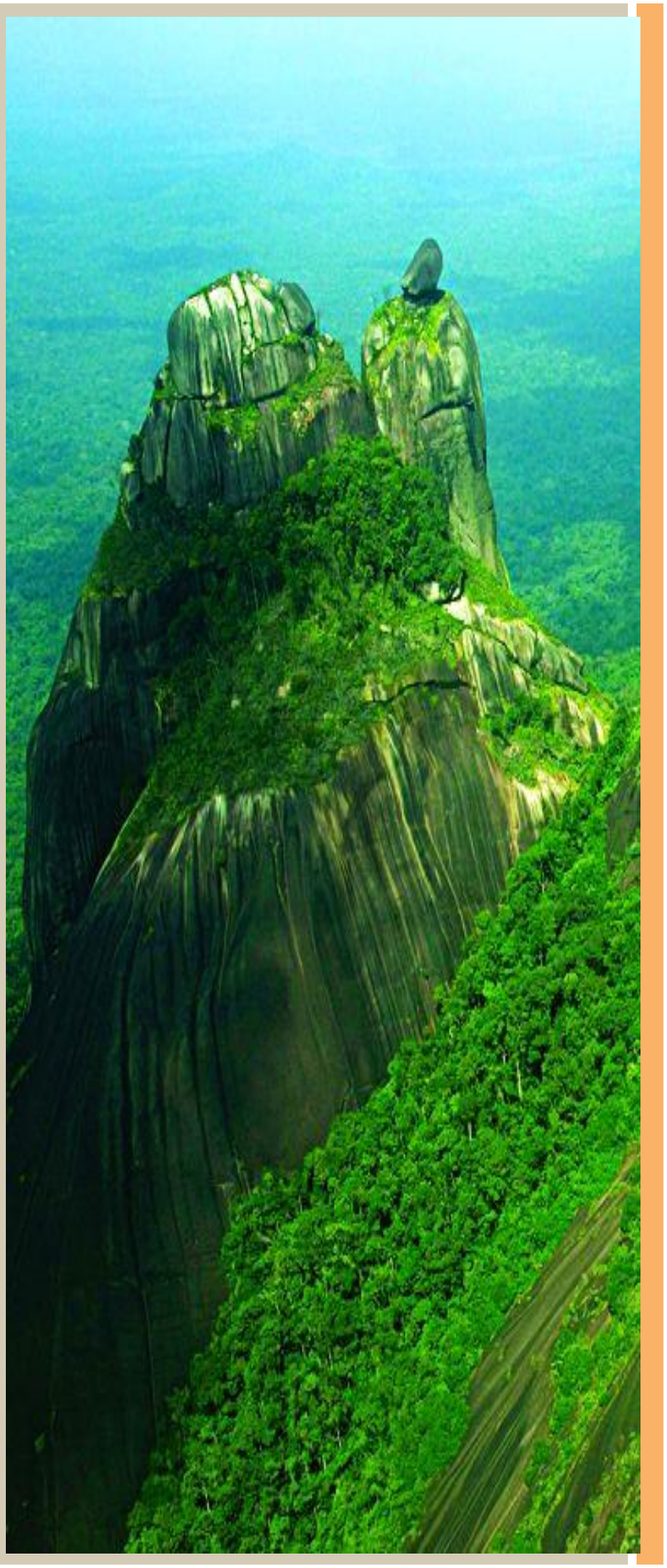
- Pollution and contamination
- Habitat modification
- Overuse of water resources
- Invasive species

External:

- Climate change
- Markets

Potential impacts on Biodiversity and Ecosystem Services

- Protected areas
- Natural habitats and Species
- Ecosystems and the provision of their ecosystem services, like:
  - Food Production
  - Water
  - Carbon emissions
  - Fish and game
  - Firewood
  - Construction materials



Feedstock production vs. Ecosystem Services

Management of an ecosystem for the delivery of a single service often reduces biodiversity and the delivery of other services.

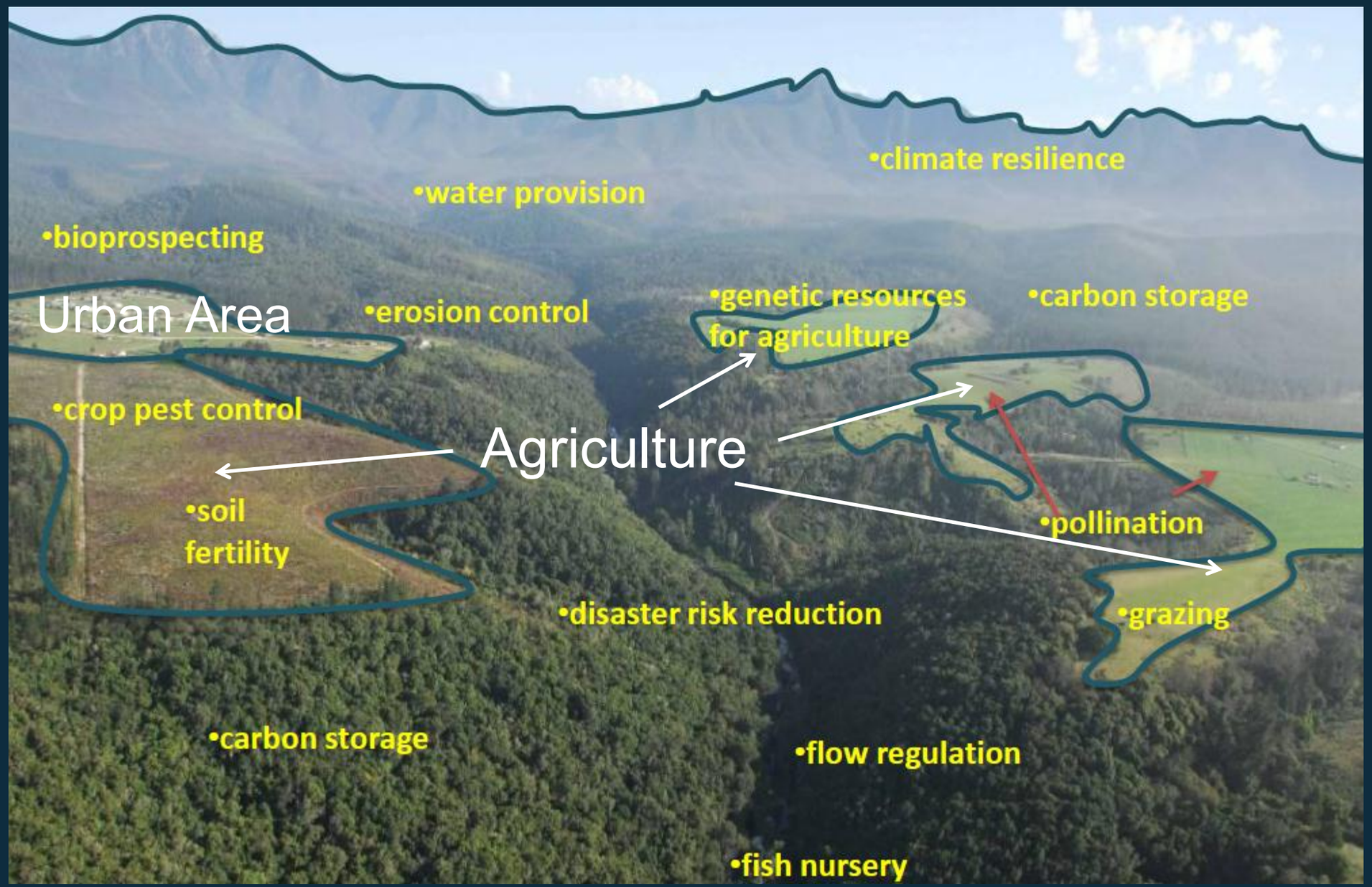
Reduction of natural capital may reduce delivery of critical ecosystem services to rural poor during the time of crisis or lean periods.

Multifunctional Landscapes

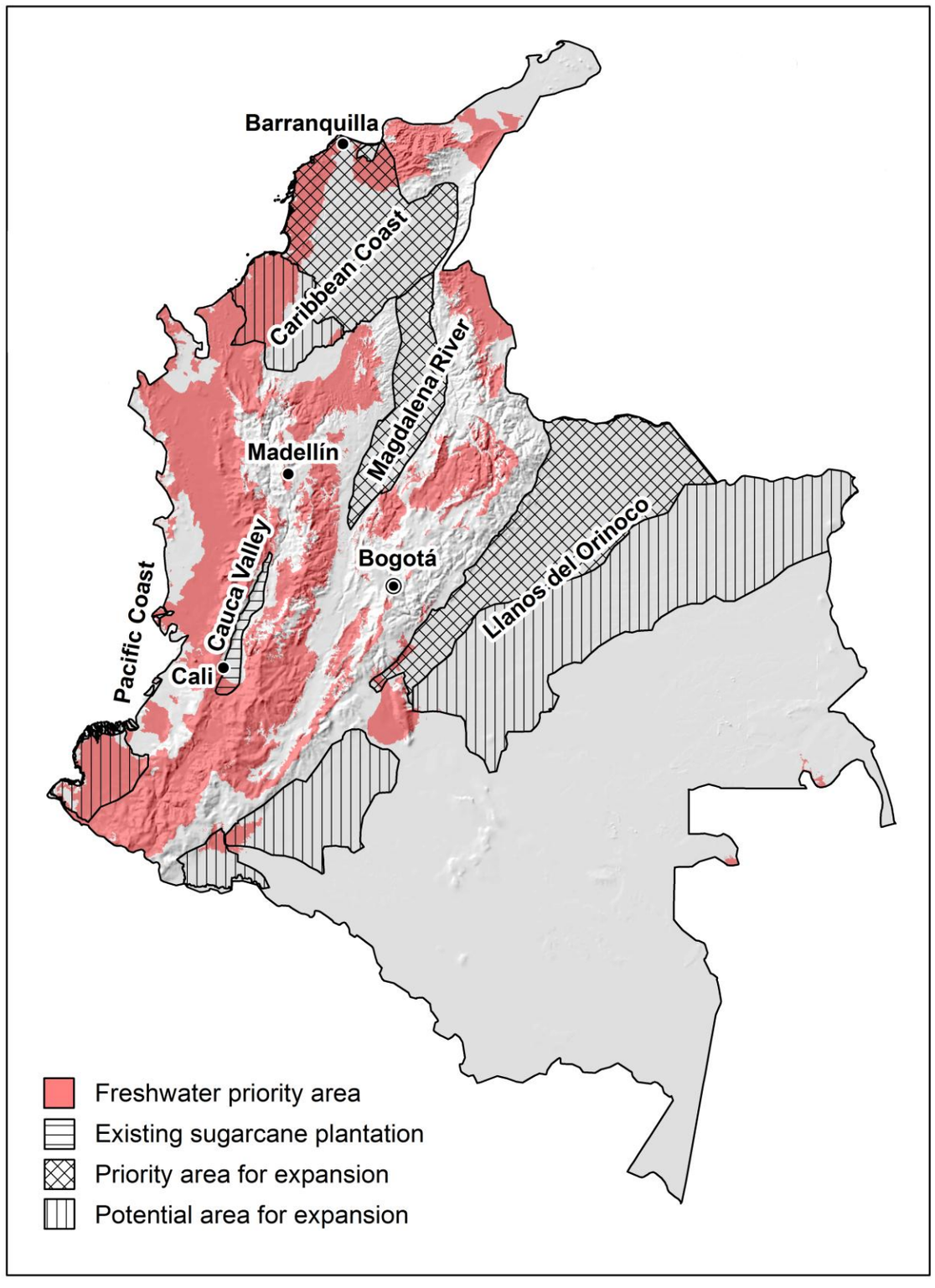
Integrated planning to achieve multiple development goals:

- ❖Reduce GHG emissions
- ❖Improve local livelihoods
- ❖Restore degraded lands
- ❖Prevent deforestation (health)
- ❖Protected and sustainably managed biodiversity
- ❖Multipurpose cropping

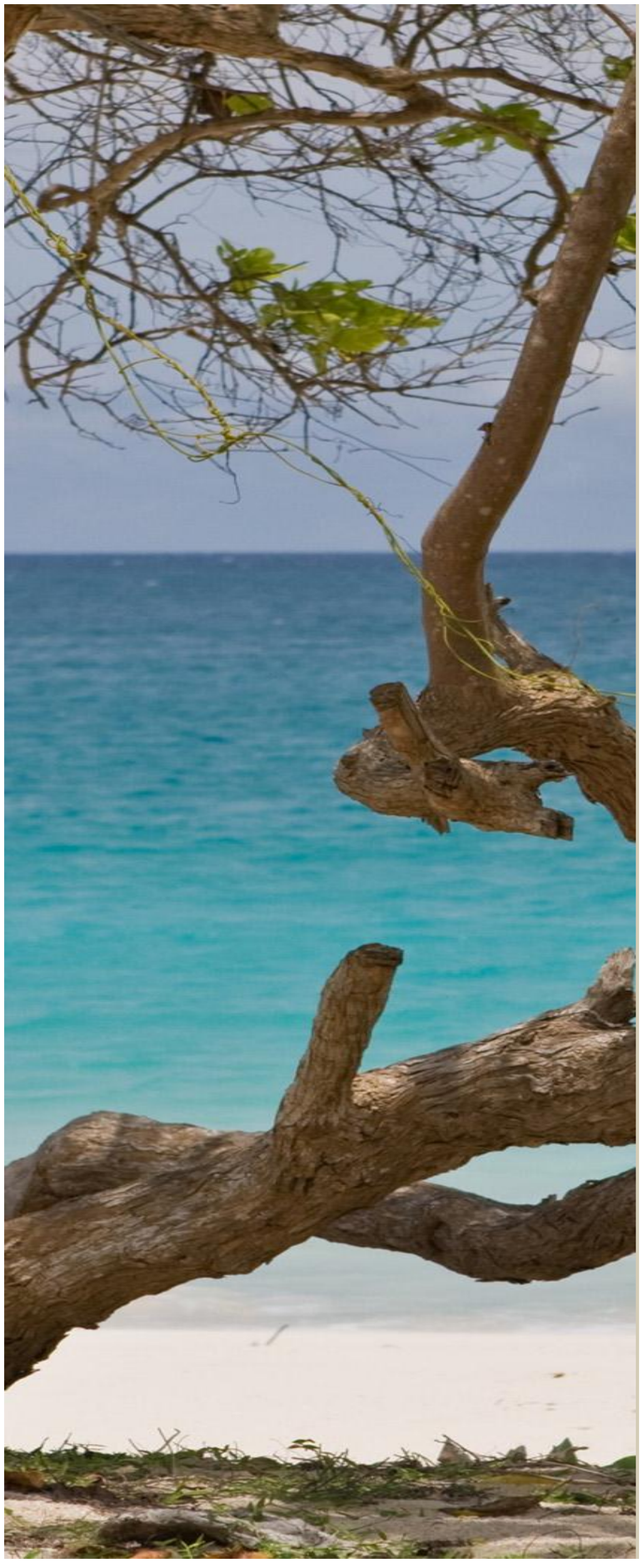
Multifunctional Landscape



Colombia: freshwater priority areas versus future expansion of biofuels feedstock production



Honzak et al. 2012 (in prep.)



Investment Safeguards

- Water quality: sediments and pollution
- Soil quality: erosion, salinization, fertility loss
- External inputs: health hazards

Impacts depend on:

- Sites selected
- Crops used
- Production technology

Monitoring systems

What are the implications of development?

Key Messages!

Further industry development acknowledges the link between ecosystem health, their services and their contribution to HWB and livelihoods

Assess and plan for BD and ESS issues from the beginning.

Explicitly design for sustainability and complementary goals that sustain the productive capacity of the agro-ecosystem.

Thanks!

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