

Challenges and Opportunities Related to the Operationalization of the *Satoyama* Initiative: A UNESCO Perspective

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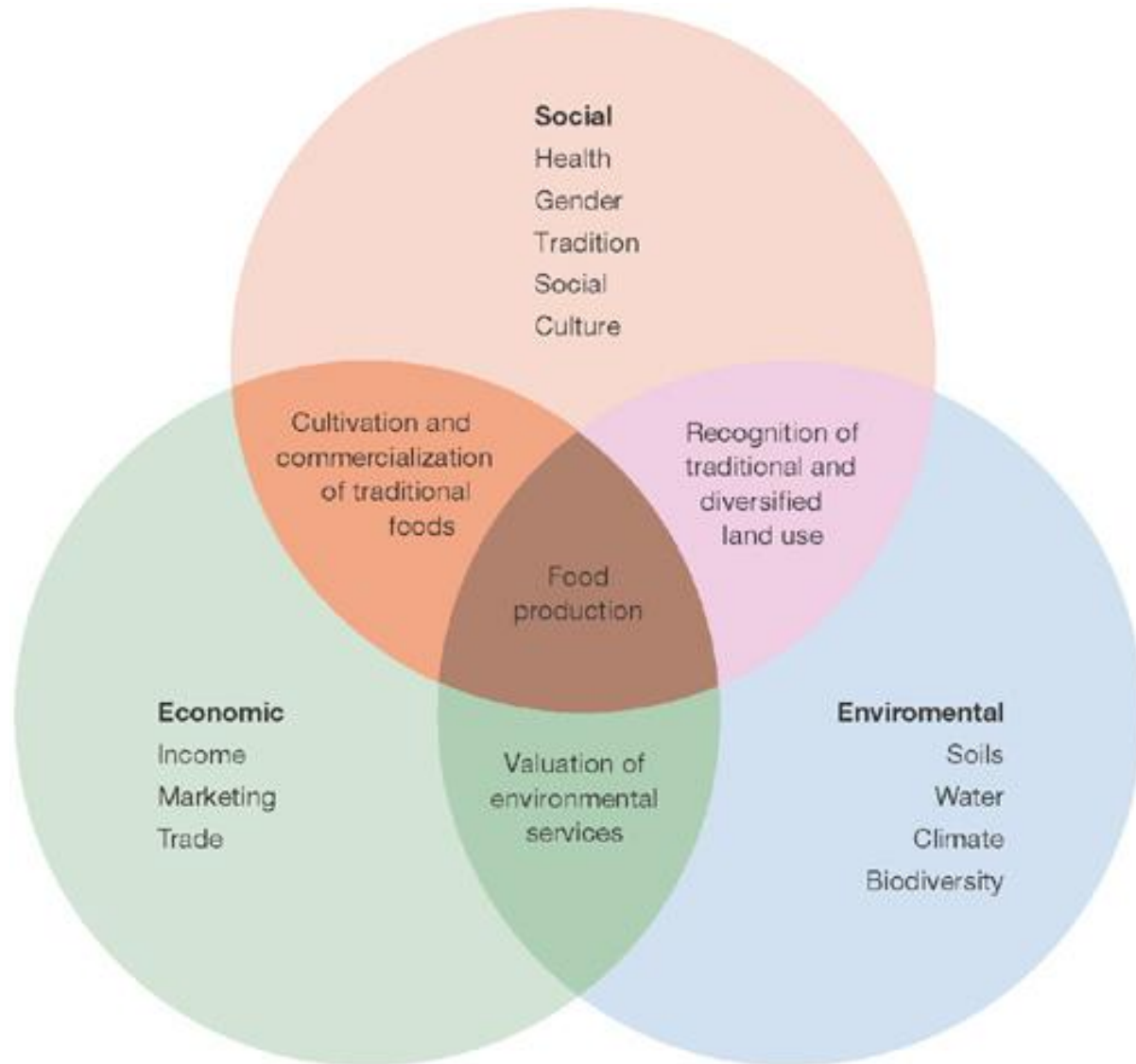
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Conceptual Challenges

Paradigm shifts and evolution in thinking

Multifunctionality in Agriculture



The Notion of Ecosystem Services: A Cultural Revolution

GLOBAL STATUS OF ECOSYSTEM SERVICES EVALUATED IN THE MA

An upwards arrow indicates that the condition of the service globally has been enhanced and a downwards arrow that it has been degraded. Definitions of "enhanced" and "degraded" for the three categories of ecosystem services shown in the table are provided in the note below. Supporting services, such as soil formation and photosynthesis, are not included here as they are not used directly by people.

Service	Sub-category	Status	Notes
Provisioning Services			
Food	crops	▲	substantial production increase
	livestock	▲	substantial production increase
	capture fisheries	▼	declining production due to overharvest
	aquaculture	▲	substantial production increase
	wild foods	▼	declining production
Fiber	timber	+/-	forest loss in some regions, growth in others
	cotton, hemp, silk	+/-	declining production of some fibers, growth in others
	wood fuel	▼	declining production
Genetic resources		▼	lost through extinction and crop genetic resource loss
Biochemicals, natural medicines, pharmaceuticals		▼	lost through extinction, overharvest
Fresh water		▼	unsustainable use for drinking, industry, and irrigation; amount of hydro energy unchanged, but dams increase ability to use that energy
Regulating Services			
Air quality regulation		▼	decline in ability of atmosphere to cleanse itself
Climate regulation	global	▲	net source of carbon sequestration since mid-century
	regional and local	▼	preponderance of negative impacts
Water regulation		+/-	varies depending on ecosystem change and location
Erosion regulation		▼	increased soil degradation
Water purification and waste treatment		▼	declining water quality
Disease regulation		+/-	varies depending on ecosystem change
Pest regulation		▼	natural control degraded through pesticide use
Pollination		▼ ^a	apparent global decline in abundance of pollinators
Natural hazard regulation		▼	loss of natural buffers (wetlands, mangroves)
Cultural Services			
Spiritual and religious values		▼	rapid decline in sacred groves and species
Aesthetic values		▼	decline in quantity and quality of natural lands
Recreation and ecotourism		+/-	more areas accessible but many degraded

Note: For provisioning services, we define enhancement to mean increased production of the service through changes in area over which the service is provided (e.g., spread of agricultural) or increased production per unit area. We judge the production to be degraded if the current use exceeds sustainable levels. For regulating services, enhancement refers to a change in the service that leads to greater benefits for people (e.g., the service of disease regulation could be improved by eradication of a vector known to transmit a disease to people). Degradation of regulating services means a reduction in the benefits obtained from the service, either through a change in the service (e.g., mangrove loss reducing the storm protection benefits of an ecosystem) or through human pressures on the service exceeding its limits (e.g., excessive pollution exceeding the capability of ecosystems to maintain water quality). For cultural services, degradation refers to a change in the ecosystem features that decreases the cultural (recreational, aesthetic, spiritual, etc.) benefits provided by the ecosystem.

^a Indicates low to medium certainty. All other trends are medium to high certainty.



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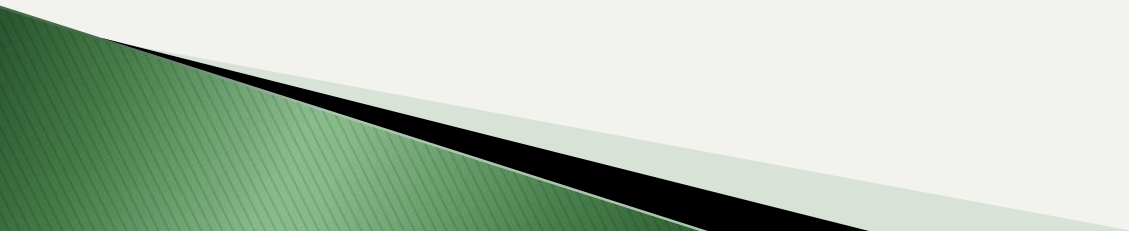


From Green Economies to Green Societies

UNESCO's Commitment to Sustainable Development



UNESCO's Normative Work and Site-level Technical Backstopping



1972 World Heritage Convention

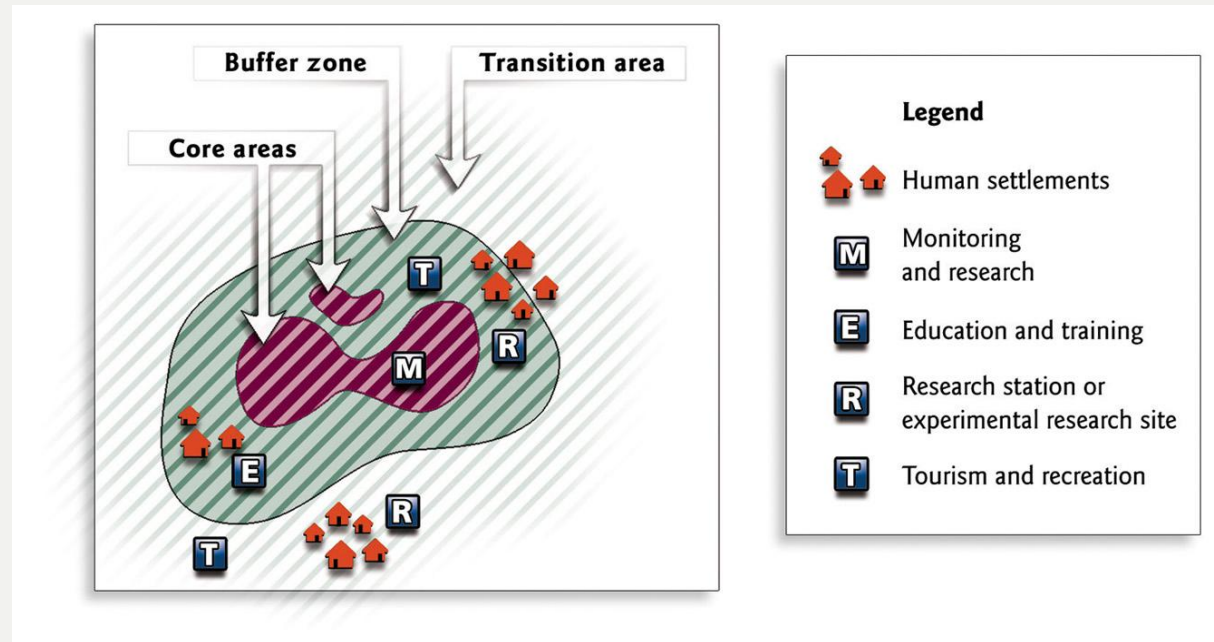
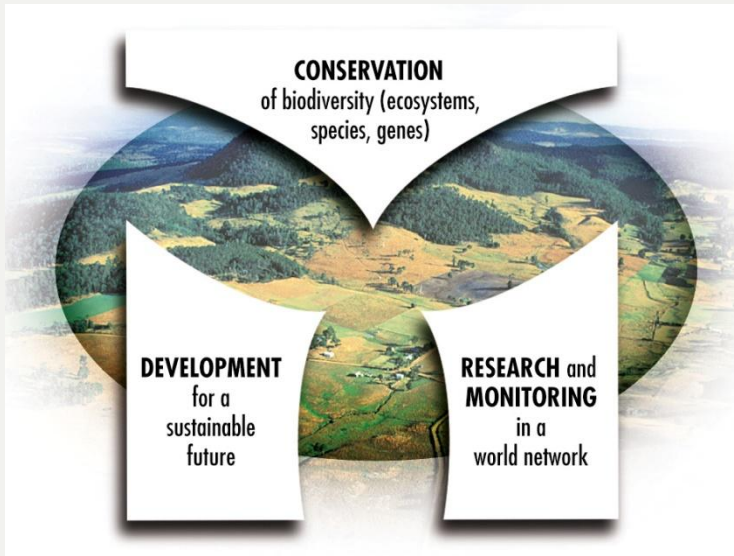


- ▶ The fundamental underlying legal principle
 - ▶ The criteria
 - ▶ Nomination process
 - ▶ 689 cultural, 176 natural and 25 mixed properties in 148 State Parties
 - ▶ List in Danger

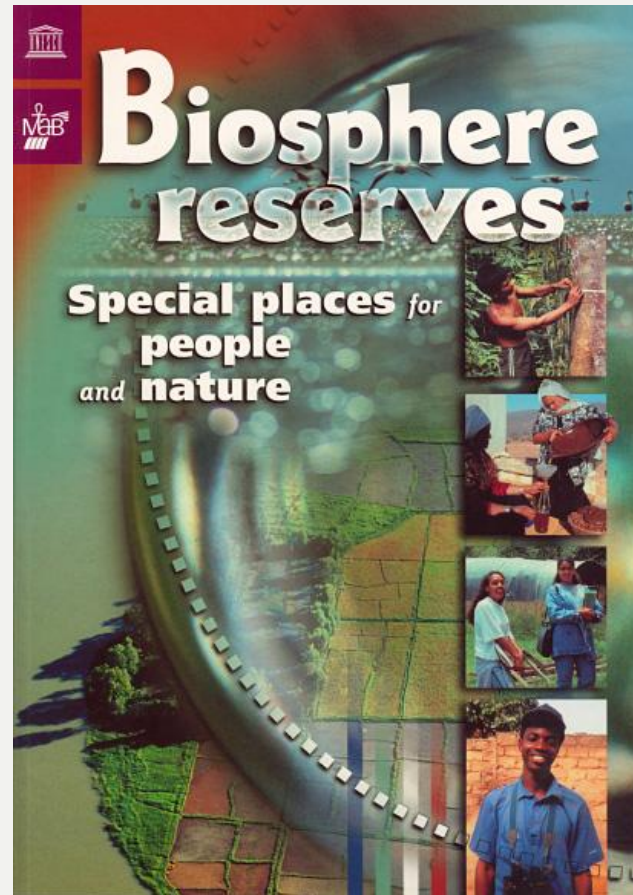
UNESCO's Man and the Biosphere Programme



- ▶ Over 500 sites worldwide in over 100 countries
- ▶ Act as laboratories where biodiversity conservation and sustainable development approaches are tested and developed
- ▶ Places to design innovative economic models that benefit local people and maintain cultures, biodiversity and associated values



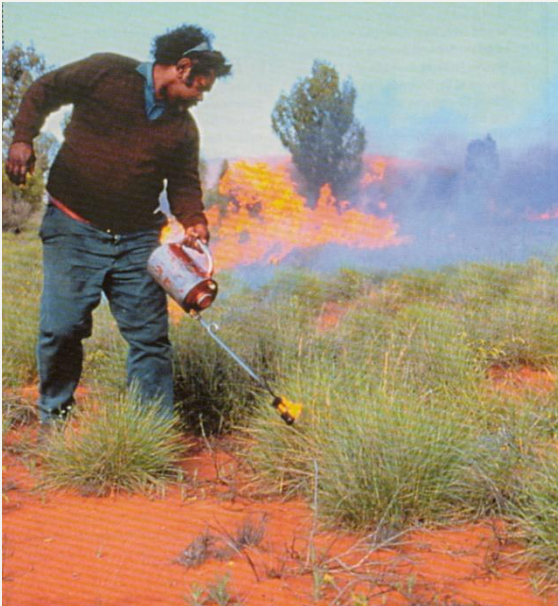
Case studies in Biosphere Reserves



Uluru–Kata Tjuta Biosphere Reserve, Australia



- ▶ Aboriginal traditional practices of landscape management, including burning, are included in the management plan of the site.
- ▶ Traditional practices coupled with scientific knowledge provide innovative tools that sustain both biological and cultural diversity.



Bosawas Biosphere Reserve, Nicaragua

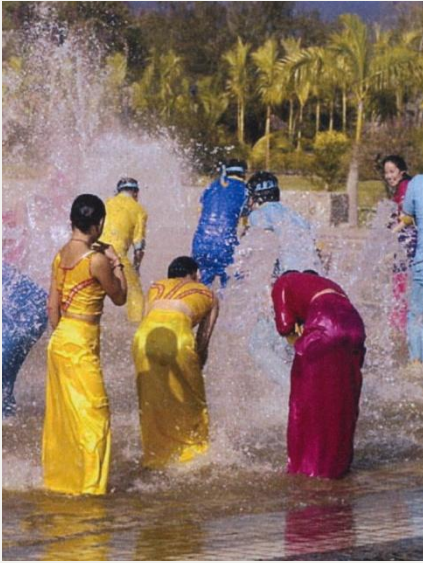


The indigenous Mayangna are knowledgeable about human–nature interactions, and put into practice lifestyles that conserve biological diversity.

By maintaining their language and the vitality of indigenous knowledge, the Mayangna can continue informing the development of culturally–appropriate and sustainable biodiversity management options.



Xishuangbanna Biosphere Reserve, China



- ▶ Holly hills set aside by the Dai people and other ethnic groups as ‘sacred forests’ have preserved islands of forest biodiversity in mountain and hilly areas.
- ▶ Protection of forests guarantees water supply, and provision of animal and plant products to support daily life and nutrient balance of the local communities.
- ▶ Conservation of biodiversity based on cultural and religious values – more sustainable than that based only on government legislation or regulation.



Material culture



Al Shouf Biosphere Reserve, Lebanon

Local communities interaction with natural resources: exploitation of wood and non wood forest products, food processing, handicrafts, etc.



Mutual influences constitute the key element for an integrated management plan aiming at:

- maintaining sustainable practices
- ensuring biodiversity conservation & sustainable development
- providing locals with appropriate job opportunities.

Kristianstads Vattenrike Biosphere Reserve, Sweden



- ▶ *Ecomuseum Kristianstads Vattenrike* ensures an adaptive co-management system for the cultural landscape of the wetlands.

The EKV acts as a bridge between local actors and governmental bodies for a flexible community-based natural resource management system through:



The social and cultural institutions that ensure to manage natural resources exemplify the complex ways in which people and nature interact.



Challenges and Recommendations

- Bridging scales
- Satoyama as a knowledge network
- A comprehensive assessment of SEPLs?
- Transition zones

Thank You.

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