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Perspective

The Economic Valuation of Coastal Ecosystems: Implications for Management and its Policies

Ava Merrick*

Department of Environmental Sciences, University of Athens, Athens, Greece

DESCRIPTION

Coastal ecosystems, including mangroves, coral reefs, salt marshes, and estuaries, provide a wide range of ecological, economic, and social benefits. These ecosystems support biodiversity, protect shorelines from erosion and storm damage, filter pollutants, and contribute to fisheries and tourism industries. Understanding and quantifying the economic value of coastal ecosystems is significant for informing management decisions, shaping policies, and promoting sustainable development practices that balance conservation with economic activities.

Economic benefits of coastal ecosystems

Some of the economic benefits of coastal ecosystems are listed below:

Coastal protection: Mangroves and coral reefs act as natural barriers against storm surges and coastal erosion, reducing property damage and infrastructure costs during extreme weather events.

Fisheries support: Coastal habitats provide essential nursery areas for fish and shellfish species, supporting commercial and recreational fisheries. Healthy ecosystems contribute to fish stocks, seafood production, and livelihoods in coastal communities.

Tourism and recreation: Scenic coastal landscapes, pristine beaches, and diverse marine life attract tourists, generating revenue from recreational activities such as diving, boating, and wildlife watching.

Water quality and nutrient cycling

Coastal wetlands and marshes filter pollutants and trap sediments, improving water quality in estuaries and coastal waters. Clean water supports fisheries, recreational activities, and human health.

Ecosystems like salt marshes and seagrass beds recycle nutrients, enhancing soil fertility and supporting coastal agriculture. This nutrient cycling reduces the need for artificial fertilizers and promotes sustainable land use practices.

Methods of economic valuation/market-based valuation

Quantifiable economic benefits derived directly from coastal ecosystems, such as fisheries production, seafood harvests, and tourism revenue.

Indirect use values: Benefits that support economic activities indirectly, including water filtration, shoreline protection, and carbon storage.

Non-market valuation

The value people place on knowing that coastal ecosystems exist, even if they do not directly use or benefit from them.

Option value: The value of preserving coastal ecosystems for significant prospective use or benefits, such as undiscovered pharmaceuticals or prospective scientific research.

Implications for management and policy

Economic valuation provides decision-makers with quantifiable data on the benefits of coastal ecosystems, enabling informed choices about resource allocation, land use planning, and infrastructure development.

Incorporating economic values into management plans helps prioritize conservation efforts, identify areas for restoration, and mitigate significant conflicts between economic development and environmental protection.

Correspondence to: Ava Merrick, Department of Environmental Sciences, University of Athens, Athens, Greece, E-mail: merrick@gmail.com

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Policy development

Policies that integrate economic valuation findings can promote sustainable development practices that protect coastal ecosystems while supporting economic growth.

Financial incentives, such as Payments for Ecosystem Services (PES) and environmental taxes, can encourage the nature to adopt practices that enhance ecosystem health and resilience.

Challenges and considerations

Quantifying non-market values, such as cultural and spiritual benefits, poses challenges due to subjective perceptions and diverse cultural values.

Policy implementation

Overcoming institutional barriers, securing adequate funding, and aligning policies across multiple sectors are critical for effective implementation of ecosystem-based management approaches.

The economic valuation of coastal ecosystems provides essential insights into their contributions to human well-being and environmental sustainability. By quantifying the benefits of ecosystem services, policymakers can make informed decisions that balance conservation with economic development values. Integrating economic valuation findings into coastal zone management strategies supports resilient, adaptive, and sustainable practices that enhance ecosystem health, protect biodiversity, and safeguard coastal communities against climate change impacts. Continued research, collaboration, and adaptive management approaches are essential for advancing policies that promote the sustainable use and preservation of coastal ecosystems for current and prospective generations.