Economic Valuation of India’s Forest Ecosystem Services

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Why in News?

A recent study titled "Contribution of forest ecosystem services in India using a meta-regression approach" has, for the first time, quantified the actual aggregate worth of India’s forests on a national scale.

Key Findings

- **Forest Value Distribution -** The study estimates that Indian forests deliver ecosystem services worth an average of US$31,001 per hectare per year.

Forest Type	Share of Contribution	Key Characteristics
Tropical Dry Deciduous Forests	Maximum Contribution (US$703 billion/yr)	Accounts for the ***largest proportion*** of India's forest cover; highly valuable due to extensive ecological spread and seasonal services.
Mangrove / Littoral Forests	Second Highest Contribution	Provides high-value per-unit services (coastal shielding, storm mitigation, and marine nurseries).

- **Service-Type Valuation Hierarchy -** Ecosystem services are classified into different categories.
  - **Cultural Services (Highest Average Value)-** Ecotourism, spiritual and aesthetic value, and recreation.
  - **Provisioning Services -** Direct material outputs such as Non-Timber Forest Products (NTFPs like medicinal plants, bamboo, honey) generating an estimated Rs. 1.75 lakh crore annually.
  - **Regulating Services -** Water regulation (priced at Rs. 20,000 crores annually), carbon sequestration, and soil erosion prevention.

Core Challenges

- The study's statistical model reveals that a 1% increase in local population density is associated with an 11.3% decrease in the value of forest ecosystem services.
- Standard national forest statistics treat monoculture timber plantations and natural mixed-species forests equally.
- However, monoculture stands deliver only a tiny fraction of the ecological services (such as water regulation and biodiversity support) compared to natural forests.
- Current compensation metrics, like the Net Present Value (NPV) used during the diversion of forest land for non-forest activities, under-represent the full economic cost of lost regulating and cultural services.
- These massive environmental contributions are completely missing from India's national accounts (GDP calculation), leading to policy decisions that systematically under-price the destruction of natural capital.

Key Recommendations

- Strengthen the Compensatory Afforestation Fund Management and Planning Authority (CAMPA)
- Payment for Ecosystem Services (PES).
- Adopt Green Accounting

Reference

Times of India | Contribution of forest ecosystem services in India

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