प्रगतेः मूलं प्रकृतिः

Economic Valuation as a Tool for Informed Decision Making to Ensure Environmental Sustainability

Workshop on

Energy and Environment in the Context of Sustainable Development Goals in India

TERI, 31/03/2015

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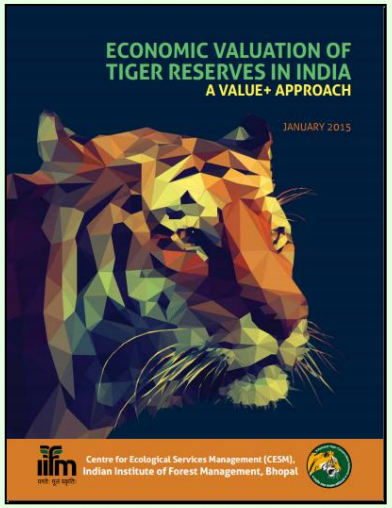
Mission

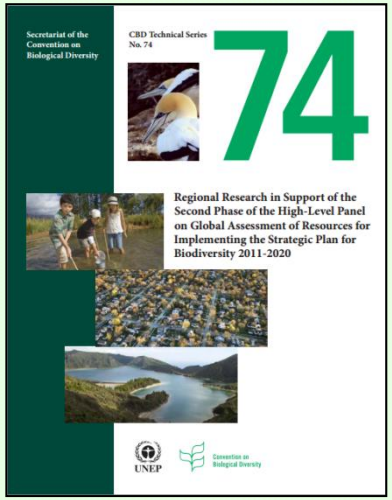
Conduct action and policy research for ecosystem services management

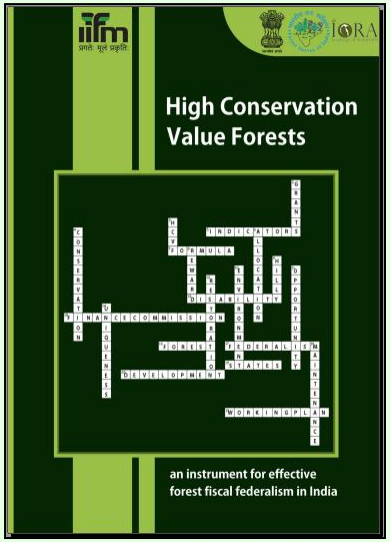
Goal

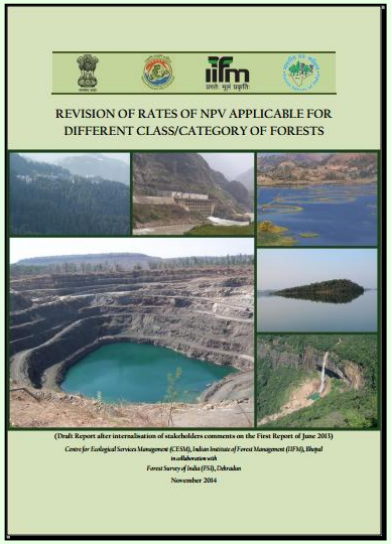
Function as a think tank to generate useful database and an appreciation for ecosystem services, their physical assessment, valuation and establish incentive based mechanisms to promote conservation.

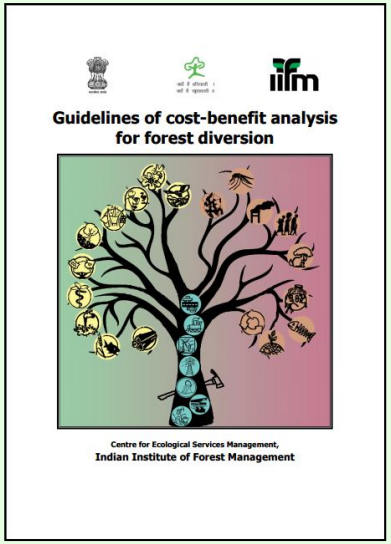
Highlights and learning from few studies conducted at CESM





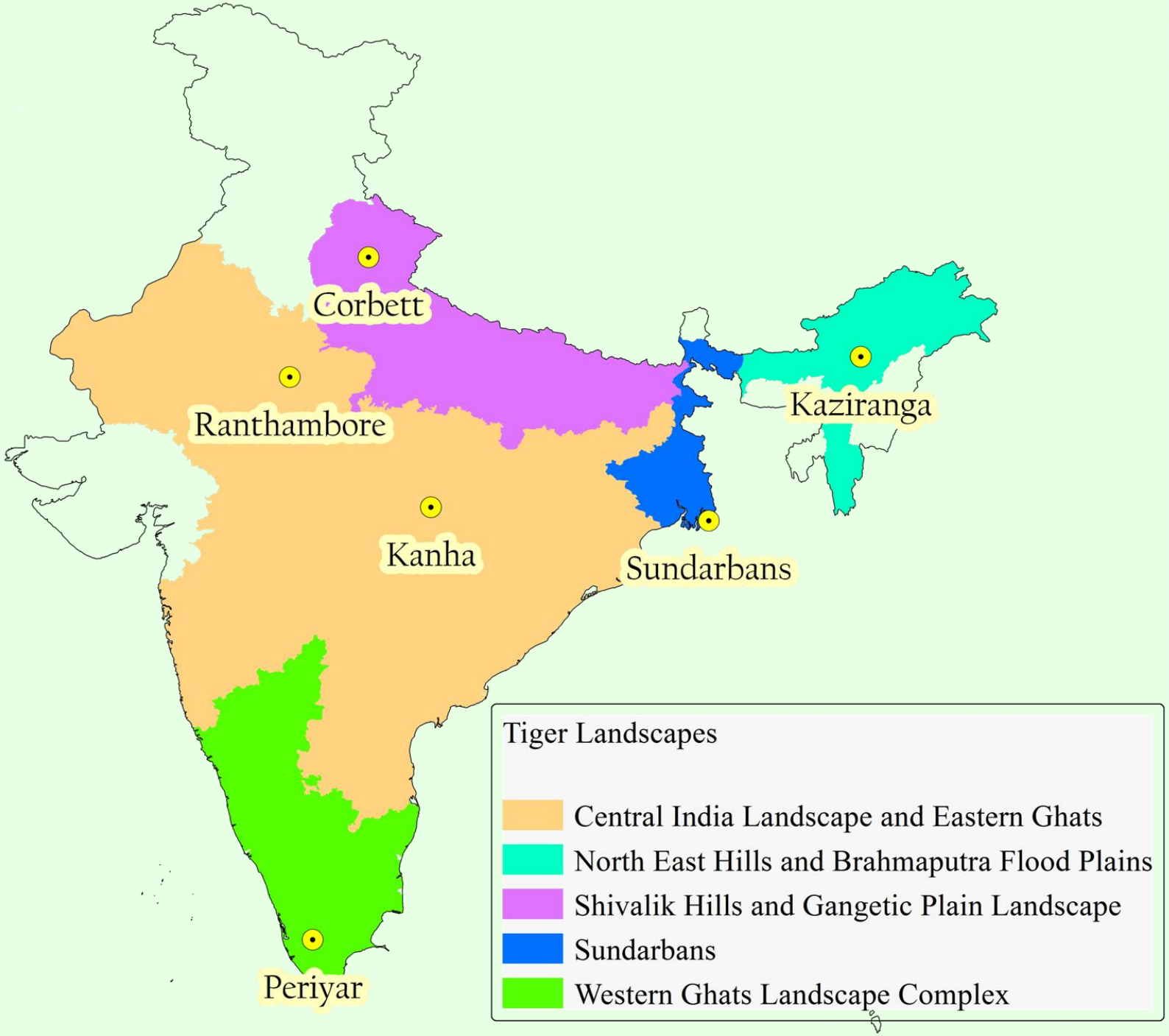




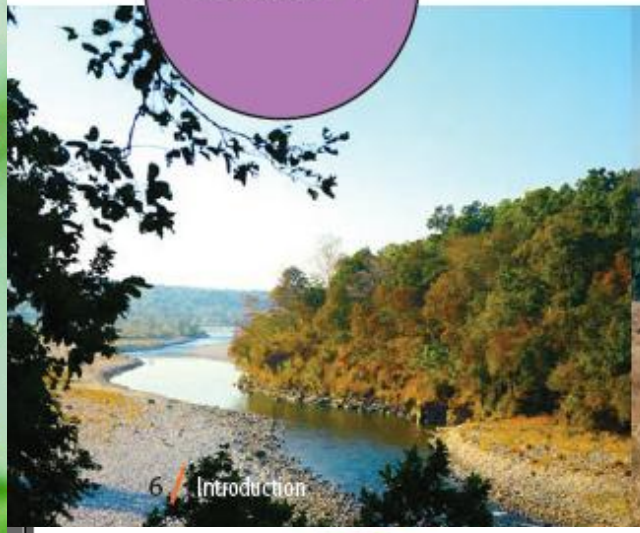


I. Economic Valuation of Tiger Reserves in India: A VALUE+ approach (NTCA) : A Case of Policy and Institutional Success

- Tigers vital for regulating and perpetuating ecological processes
- TRs also provide a range of ecosystem services
- A VALUE+ Approach
- 6 TRs across tiger landscapes: Corbett, Kanha, Kaziranga, Periyar, Ranthambore, Sundarbans
- Qualitative and quantitative assessment of 25 ecosystem services


Corbett
Ranthambore
Kanha
Kaziranga
Sundarbans
Periyar
Tiger Landscapes
Central India Landscape and Eastern Ghats
North East Hills and Brahmaputra Flood Plains
Shivalik Hills and Gangetic Plain Landscape
Sundarbans
Western Ghats Landscape Complex

CORBETT



KANHA

KAZIRANGA

RANTHAMBORE

PERIYAR

SUNDARBANS

Economic Valuation of Tiger Reserves in India: A VALUE+ approach

- Flow benefits: Rs. 8-18 billion/yr (0.5-2 lakh/ha/yr)
- Conservation of stock: Rs. 22–650 billion
- A large majority of benefits are intangible
- Large benefits at national and global scale
- Investment multiplier: 200 to 530
- Mapping of 3 ecosystem services at 2 tiger reserves - Kanha and Periyar: a pilot
- Cost of Re-creating a TR (Rs. 500 billion)

Economic Valuation of Tiger Reserves in India: A VALUE+ approach

- Enhanced investment is economically rational
- Option values likely to be immense
- Economic values of TRs not comparable
- Benefit-sharing mechanisms required
- Connectivity and exchange of gene-flow critical
- Institutionalizing data collection
- Upscale the study to India and tiger-range countries

6 tiger reserves worth Rs 1.5 lakh crore, says valuation study

Vishwa Mohan,TNN | Jan 22, 2015, 05.07 AM IST

READ MORE »Tigers In India | 6 Tiger Reserves Worth Rs 1.5 Lakh Crore

India has 47 tiger reserves covering over 2% of the area and approximately 10% of the recorded forest area.

NEW DELHI: In a first of its kind exerc
has conducted economic valuation of si
tiger reserves and placed their value at
1,49,900 crore. The study has also note
these six reserves have been generating
monetary benefits worth Rs 7,970 crore

The six tiger reserves which were survey
this study are Corbett, Kanha, Kazirang
Periyar, Ranthambore and Sundarbans

India has 47 tiger reserves covering ove
the area and approximately 10% of the
forest area. Latest tiger census, released
Tuesday, shows that India - which is ho

WHAT TIGER RESERVES ADD TO THE ECONOMY

A study 'Economic Valuation of Tiger Reserves' released on Tuesday shows that six tiger reserves provide economic benefits* worth ₹8,000 crore a year

*The benefits include gene pool protection, water conservation and purification, local employment, carbon sequestration, recreation services, fuel wood, fodder, timber, non-wood produce, soil conservation

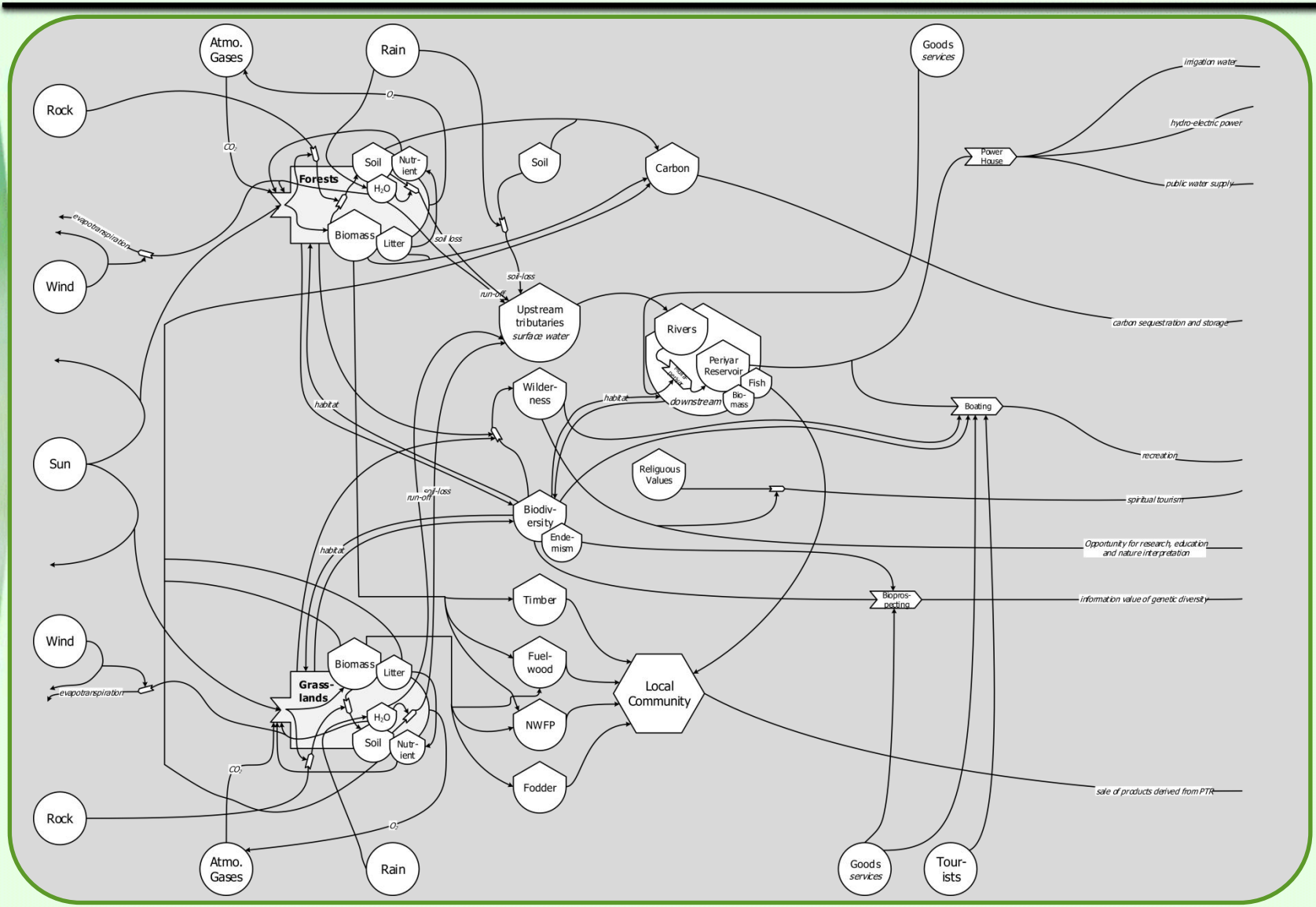
ALL-INDIA TIGER ESTIMATES

Shivalik-Gangetic Plain Landscape Complex	2006	2010	2014
Uttarakhand	178	227	340
Uttar Pradesh	109	118	117
Bihar	10	8	28
Shivalik-Gangetic	297	353	485
Central Indian Landscape Complex and Eastern Ghats Landscape Complex			
Andhra Pradesh (including Telangana)	95	72	68
Chhattisgarh	26	26	46
Madhya Pradesh	300	257	308
Maharashtra	103	169	190
Odisha	45	32	28
Rajasthan	32	36	45
Jharkhand	-	10	3+
Central India	601	601	688
Western Ghats Landscape Complex			
Karnataka	290	300	406
Kerala	46	71	136
Tamil Nadu	76	163	229
Goa	-	-	5
Western Ghats	402	534	776
North Eastern Hills and Brahmaputra Flood Plains			
Assam	70	143	167
Arunachal Pradesh	14	-	28
Mizoram	6	5	3+
Northern West Bengal	10	-	3
North East Hills, and Brahmaputra	100	148	201
Sunderbans	-	70	76
TOTAL	1,411	1,706	2,226

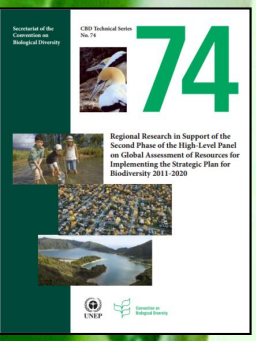
Source: Government of India

Graphic: Yatish Asthana/Mint

Complex linkages (Ecosystem Services Converted into Energy Factors)



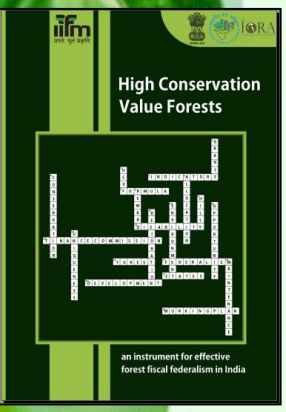
II. Regional research to inform the High Level Panel on global assessment of resources for implementing the strategic plan for biodiversity 2011-2020: report for South Asia region (CBD) : Policy, Institutions and Market Strengthening



- Substantial quantity of evidence on the benefits of conservation and sustainable use of biodiversity in South Asia
- Benefits of biodiversity conservation are shown to be substantial and higher than the costs of conservation in most cases
- Net benefits are often locally negative but nationally or globally positive
- Little quantitative evidence on the investment needs, resource requirements and cost-effectiveness of options to meet the Aichi Targets
- Substantial gap between available and required resources for achieving the Aichi Targets

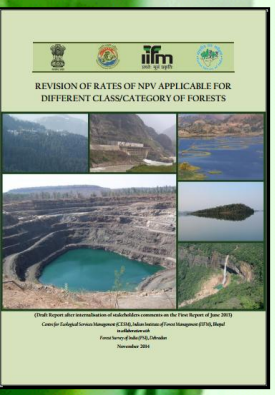
III. High Conservation Value Forests: an instrument for effective forest fiscal federalism in India (14th Finance Commission of India) : Incentive Based Mechanisms

- Forests and externalities
- Inadequate motivation for states to keep areas under forests
- Suggested allocation based on High Conservation Value Index
- 14FC has included forest cover in the devolution formula (weight: 7.5)
- Case of conservation finance



IV. Revision of rates of NPV applicable for different class/category of forests (MoEFCC) : CLEV

- Detailed matrix for NPV rates (14 X 4)
- About 50% of the total economic value of forests is accrued at the local level
- Add-on factors of hill talukas and forested wetlands
- 10X for National Parks and 5X for WLS
- Possession Value of Land
- Afforestation to forest rehabilitation
- Discounting benefits from CA
- CAMPA monies to be shared with all concerned stakeholders
- NPV Hub for MoEFCC is under progress at CESM

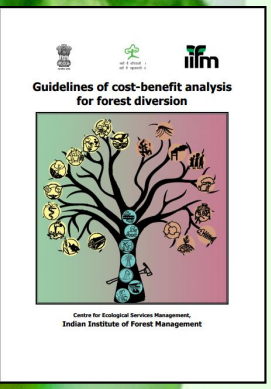


Current and Proposed rates of NPV

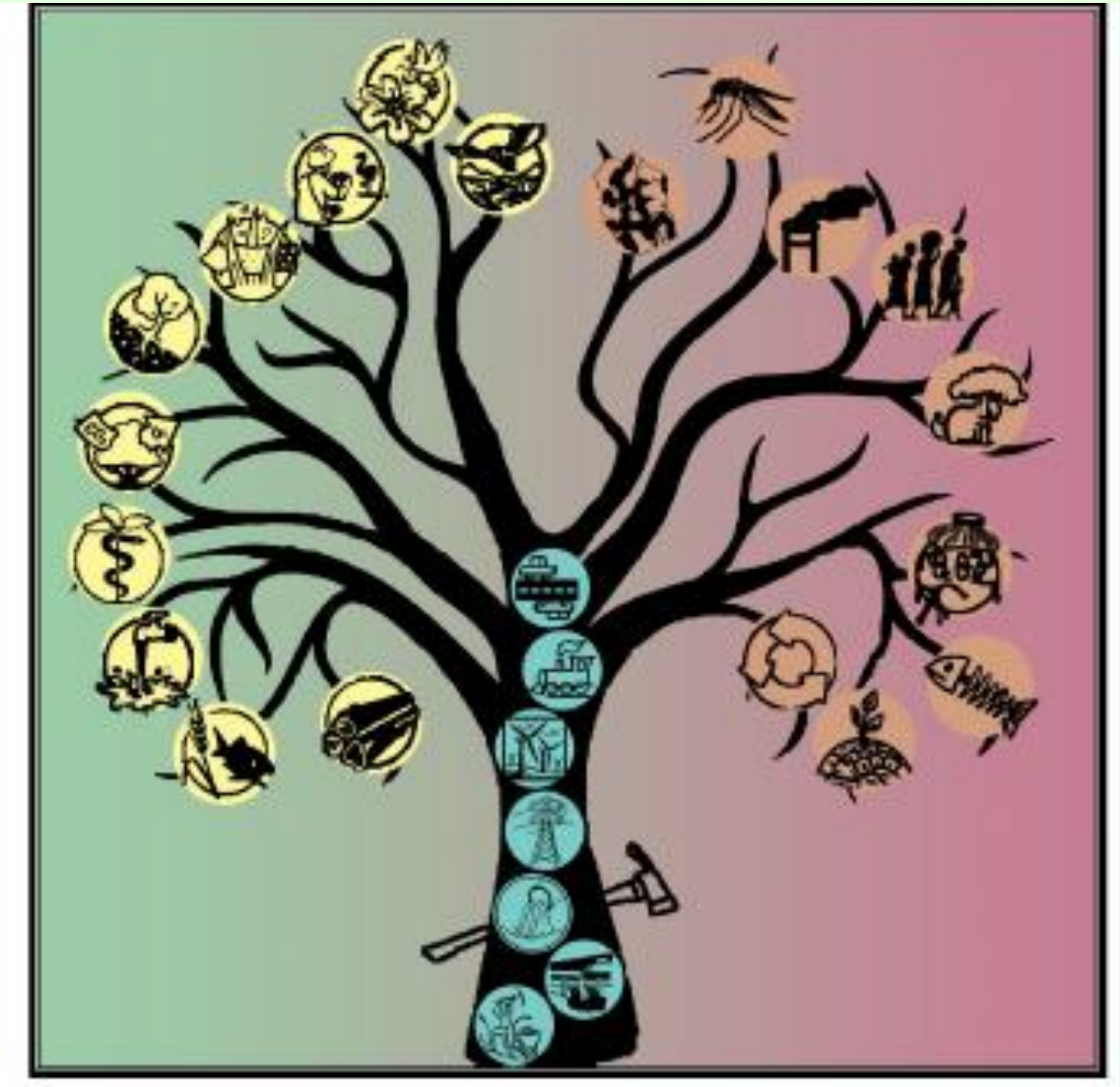
					Area with most lilkelihood of proposed forest diversion			
Proposed and Currently Prevalent NPV Rates (in Rs. Lakhs/ha); figures in parenthesis indicate %change w.r.t. current rates	VDF		MDF		OF		LTF	
NPV Rates	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current[3]
Tropical Wet Evergreen Forests – North East	38.85	10.43	21.27	9.39	19.03	7.30	7.52	7.30
	[272%]		[127%]		[161%]		[3%]	
Tropical Wet Evergreen Forests – Western Ghats	43.34	10.43	31.31	9.39	14.22	7.3	9.01	7.30
	[316%]		[233%]		[95%]		[23%]	
Tropical Semi Evergreen Forests - North East	23.62	10.43	17.78	9.39	9.87	7.3	6.46	7.300
	[126%]		[89%]		[35%]		[-12%]	
Tropical Semi Evergreen Forests - Eastern Deccan	55.55	10.43	45.68	9.39	26.97	7.3	24.86	7.30
	[433%]		[386%]		[269%]		[241%]	
Tropical Semi Evergreen Forests - Western Ghats	33.89	10.43	23.66	9.39	15.44	7.3	10.12	7.30
	[225%]		[152%]		[112%]		[39%]	
Tropical Moist Deciduous Forests	30.32	10.43	22.25	9.39	13.55	7.3	7.61	7.30
	[191%]		[137%]		[86%]		[4%]	
Littoral & Swamp Forests	49.02	10.43	35.12	9.39	22.58	7.3	17.48	7.30
	[370%]		[274%]		[209%]		[139%]	

V. Guidelines of cost-benefit analysis for forest diversion (MoEFCC) : Institutional strengthening

- Social costs and private benefits
- Detailed and extensive set of screening criteria
- Sector-specific guidelines for all major sectors
- CBA for different scenarios
- Results to be conveyed in clear and transparent manner
- Templates



Benefits Lost and Costs Imposed on account of Developmental activities



VI. Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) (UNEP)

ongoing work : diverse conceptualization and assessment of the multiple values of nature and its benefits, including biodiversity and ecosystem services :Multipronged approach

- Science Policy Interface
- Assessment of existing knowledge
- Engagement of a great diversity of stakeholders
- Explicitly embraces different disciplines and knowledge systems
- Push the frontiers of biodiversity science
- Also includes capacity-building, catalysing generation of new critical knowledge, and development of policy tools

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Thank You

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