

Economic Valuation of Forests of Himachal Pradesh

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Executive Summary

The principle objective of this study is to generate economic value of various goods & services provided by the Himachal Forests. It recognizes the multi-stakeholders, multisectoral contribution of forests through their multiple values.

The values that accrue to various stakeholders & sectors are in the form of direct consumptive benefits like timber, fodder, fuelwood, NTFPs; direct non-consumptive benefits like ecotourism & recreational and indirect benefits like watershed functions, carbon sinks, micro-climate, biodiversity & employment. The study highlights that these values though provided to various users but go completely unrecorded in the state's accounting system. Such an approach reflects market and a policy failure which either depresses the value of forest goods and services, or makes other land uses more profitable.

The objectives of forest management have changed globally & there is an urgent need to recognize ecological contribution of forests in the economic development of the state. Himachal Pradesh having the locational advantage (being the hill state which serves as a major watershed to numerous river & rural and urban areas) and its 66% geographical area under forests, plays a pivotal role in the regional & global economy. But the contribution it makes through its forests to various stakeholders & sectors is seldomly acknowledged. Thus, this study highlights the need for sustainable management of forests which is possible only when the policy makers & planners understand the real worth of the forest stock. Likewise, the current study first takes account of the physical wealth of Himachal forests; uses appropriate valuation techniques & draws from studies conducted in forest valuation in India and similar countries to provide an extensive estimate of economic value of Himachal forests. The study claims no precision as it is based on readily available data and no primary survey was conducted for ground truthing of the economic values so generated rather it recommends a detailed follow up study for the same.

It keeps a basic philosophy in mind throughout that livelihood security of people & support to other dependent sectors are possible only through ecological security of forests of the state. The study therefore uses economic values so generated as direct input and studies the current configuration of various forest management practices. Using the current configuration as base or initial scenarios & develops alternative scenarios which may be used by policy makers as analytical devices (or tools) to aid prioritisation & policy making. These scenarios shall serve to facilitate the transition from the analysis of the existing situation to future policy alternatives which are important elements in decision making. These scenarios when combined with integrated forest resource accounts shall help the policy makers to take appropriate decisions when forests are diverted for alternative land use purposes; shall justify and substantiate the demand for better allocation of funds in forestry sector and shall help to estimate environmentally adjusted state domestic product to get real value of economic growth.

Table : 1 Economic Value of Forest Stock of Himachal Pradesh (On Annual Basis – as per 2000 prices)

Total geographical forest area of H.P.		:	36,986 Km ²	
Area under tree cover & Scrub Forest		:	14,346 Km ²	
Goods/services from Forests	Physical value	Monetary value (Rs. Crores)	Rs. Per ha. Value of goods/services in terms of total geo. Area of forests	Rs. Per ha. Value of goods/services in terms of area under tree cover and scrub forest
(1)	(2)	(3)	(4)	(5)
Total growing stock	10.25 crores m ³	40860	1.10 lakhs	2.85
Economic Value of Direct and Indirect Benefits				
I. Direct Benefits				
A. Direct Consumptive benefits				
1.Salvage	3.50 lakhs m ³	32.00	0.08 thousand	0.22 thousand
2.Timber for right holders	1.06 lakhs m ³	60.00	0.16 thousand	0.42 thousand
3. Fuelwood	27.60 lakh tons	276.00	0.75 thousand	1.92 thousand
4.Fodder	92.0 lakh tons	690.00	1.86 thousand	4.81 thousand
5.Minor forest produce	1161.56 tons	25.00	0.067 thousand	0.17 thousand
Total Direct consumptive benefits		1083.00	3 thousand	7 thousand
B. Direct Non Consumptive Benefits				
6.Ecotourism*	66.56 lakh - Tourists	6657	18 thousand	46 thousand
Total Direct Benefits(A+B)		7740	21 thousand	53 thousand
II. Indirect Benefits				
7.Watershed*	6.77crore m ³ - Growing stock in river Basin Forest Circle and 36986 km ² - entire forest area	73972	2.0 lakh	5.16 lakhs
8.Microclimatic factors	969018 Households	145	0.39 thousand	1 thousand
9.Carbon Sink*	14346 km ² - Area under tree	17645	4.7 thousand	1.23 lakhs

10. Biodiversity*/ Endangered Species	cover and scrub forest 8966- Total no. of species found in Himanchal Pradesh & 125 - Endangered species	7137	20 thousand	49 thousand
11. Employment Generation	48.40 Man days	25	0.06 thousand	1.7 thousand
Total Indirect Benefits (7+11)		98924	2.68 lakhs	6.90 lakhs
Total Economic Value(I+II)		106664	2.89 lakhs	7.43 lakhs

Note: Rs. 46 = One US \$

Note : (i) Values marked with asterisk (*) have been estimated using all India averages based on certain case studies, therefore average value per hectare for these goods and services are same in column (4) & (5).

Figures in column (3) are rounded off as they are broad estimates

It is evident from the above table that actual forest cover in Himachal covering an area of 14,346 sq.km. generate economic value at the tune of Rs. 7.45 lakh/hectare and if the entire area under legal forests is used as denominator, the value reduces to Rs. 2.89 lakh/hectare. The maximum per hectare value is generated by watershed function followed by carbon sink, biodiversity, ecotourism (all non-marketed values).

Table : 2 I. Forest Resource contribution vs. Investment

1. Value of Growing Stock	Rs. 40860 Crore
2. Total Economic Value of Forests	Rs. 106664Crore
3. Total Expenditure incurred in forest (Annual Budget)	Rs. 109 Crore
4. Revenue realised by forests	Rs. 41 Crore
II. Contribution of Forsts to the GSDP	
5. Total GSDP	Rs. 9258 Crores
6. Forestry & Logging	Rs. 487
7. Forestry as % of GSDP	5.26%
8. TEV of forests of HP (as per current estimate)	Rs. 106664 Crores
9. Corrected GSDP	Rs. 115434 Crores
10. Forestry as % of corrected GSDP	92.40 %

The table finds that total economic value is 2.61 times the value of the growing stock, 980 times the total expenditure incurred by the forestry sector of Himachal Pradesh and 2607 times the revenue realized by the forests annually. This comparison proves gross underestimation of forestry sector's contribution in the economy of the state. When the GSDP of the state is corrected for total economic value calculated through the current study the contribution of the forestry sector increases from 5.26% of GSDP to 92.40% of corrected GSDP.

Exclusion of indirect benefits from the Forest Resource Accounting System has resulted in gross underestimation of forestry sector's contribution to the Himachal's economy. The current study makes a beginning in this direction and attempts to provide a broad assessment of various values generated from Himachal forests which are used by different stakeholders but are never priced as they are not marketed. It is essential now to integrate the environmental values of forests with the marketed economic values so as to reflect true contribution of forests into economic development. At the same time various users from other sectors must compensate the forestry sector for receiving various indirect benefits and funds so generated should be ploughed back into the forestry sector so as to provide for its sustainable management. The values worked out here shall

provide a base for future policy formulation. No precision is claimed for these values rather the study recommends that a detailed project must be attempted using specific valuation techniques. These valuation techniques must be decided keeping various stakeholders and their perceptions in the mind . Such values shall be used as an input in the development of detailed forest resource accounts which when integrated with current economic accounts shall provide a holistic picture of the sector's contribution and accordingly the sector can claim its actual share in allocation of developmental funds for its sustainable management.