Green on Paper, Grey on Ground: The Hidden Cost of India's Forest Gain

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Introduction

India, home to some of the world's most varied ecosystems, has long recognized the crucial role of forests in safeguarding ecological balance, supporting biodiversity, and sustaining millions of livelihoods. Forests not only act as carbon sinks but also contribute to water security, soil conservation, and many other ecological services. In recent years, forest cover has become an important indicator for measuring biodiversity health, particularly in the face of climate change and expanding human development. The India State of Forest Report (ISFR), published biennially by the Forest Survey of India, focuses on the status and dynamics of forest cover across the country. According to recent assessment report (18th India State of Forest Report) India has recorded a marginal increase in forest cover, with states like Chhattisgarh, Uttar Pradesh and Odisha leading in afforestation efforts.

Though the latest report presents an optimistic outlook, mentioning an general rise in forest and tree cover, however, these gains often mask underlying concerning patterns of loss in old-growth forests, encroachments, vulnerability of eco-sensitive zones and the conversion of natural forests into plantations. Moreover, inconsistencies in classification—where plantations are counted alongside natural forests—have raised questions about the actual benefits of reported gains. The pressure of infrastructure development, mining, and population growth continues to threaten ecologically sensitive regions, including the Western Ghats and the North-Eastern states.

Current status of forest cover of India

Since 1987, the Forest Survey of India (FSI) has been conducting biennial assessments of India's forest cover using remotely sensed data. Tree cover assessments have been undertaken by FSI since 2001.

The findings from these evaluations are systematically documented in the biennially published India State of Forest Reports (ISFRs). The ISFR is a scientific report that delivers up to dated assessments of the country's forest resourcesusing a reliable and well-established methodology.These periodic assessments of forest and tree cover provide an outlook of the condition of India's forests and trees outside forest areas, along with the broader trends observed over the years.

Table.1. Classification of forest cover based on tree canopy density

Class	Description
Very Dense Forest (VDF)	Canopy density ≥ 70 %
Moderately Dense Forest (MDF)	40 % ≤ Canopy density < 70 %
Open Forest (OF)	10 % ≤ Canopy density < 40 %
Scrub	Canopy density < 10 %, generally with shrubs interspersed with trees
Non-Forest	Lands that do not fall into any of the above classes. It includes areas

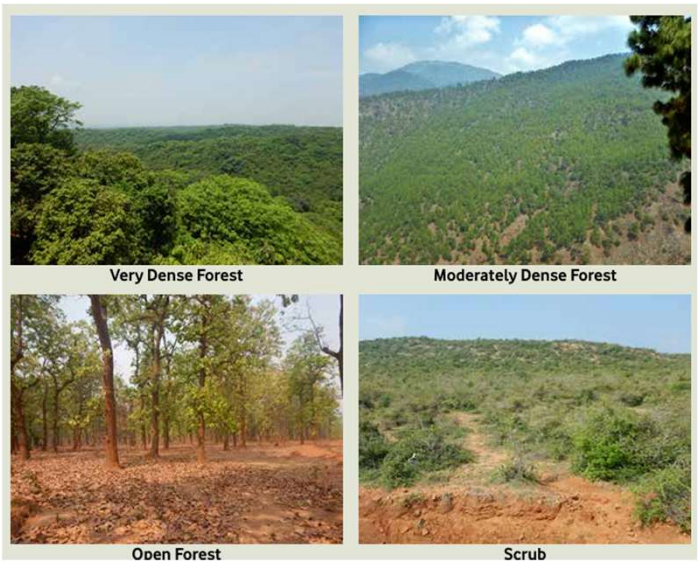
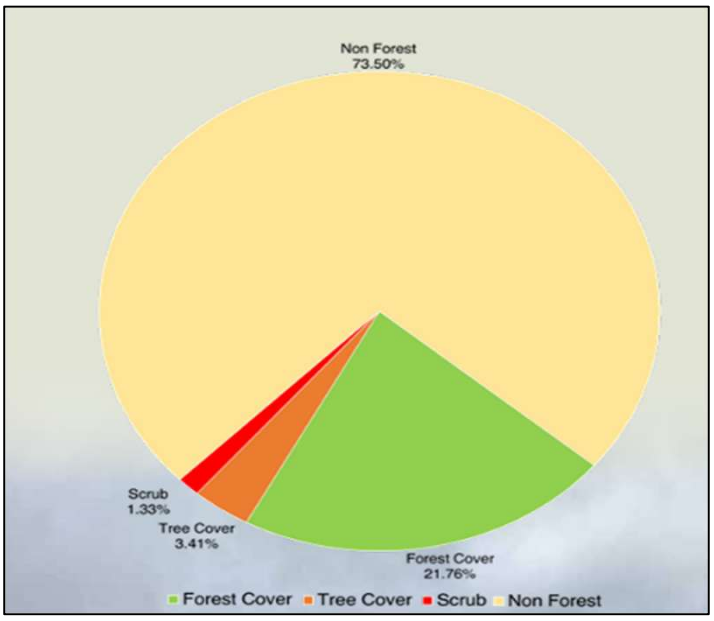


Fig.1. Examples of Different Forest Cover Classes and Scrub.(ISFR report 2023)

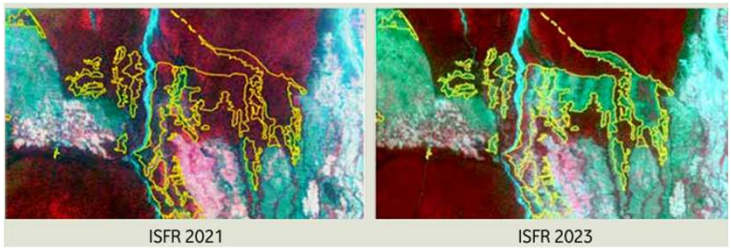
The India State of Forest Report (ISFR) 2023 highlights several important findings regarding the country's forest and tree resources. India's total forest and tree cover is reported at 8,27,357sq km, constituting 25.17% of its geographical area. This includes 7,15,343sq km (21.76%) of forest cover and 1,12,014 sq km (3.41%) of tree cover. Since 2021, there has been a net increase of 1,445 sq km in combined forest and tree cover, with forest cover rising by 156 sq km and tree cover by 1,289 sq km. regionally, states like Chhattisgarh, Uttar Pradesh, Odisha, and Rajasthan have recorded a gains in forest and tree cover. In contrast, Madhya Pradesh, Karnataka, Ladakh, and Nagaland have witnessed noticeable declines. Analarming trend is the loss of 3,656 sq km of dense forests between 2021 and 2023, which includes 294.75 sq km of Very Dense Forest (VDF) and 3,361.5 sq km of Moderately Dense Forest (MDF). Over the past decade, 40,709 sq km of forest areas have experienced a decline in density, transitioning from VDF and MDF to Open Forest (OF). Additionally, mangrove cover has reduced by 7.43 sq. km., with Gujarat facing the largest loss of 36.39 sq km followed by 4.65 sq km of the Andaman and Nicobar Islands. The Western Ghats, recognized as a vital eco-sensitive zone, have experienced a net loss of 58.22 sq km in forest cover over the past decade. North Eastern states have decline in forest cover by 327 sq km.

Scenario in West Bengal

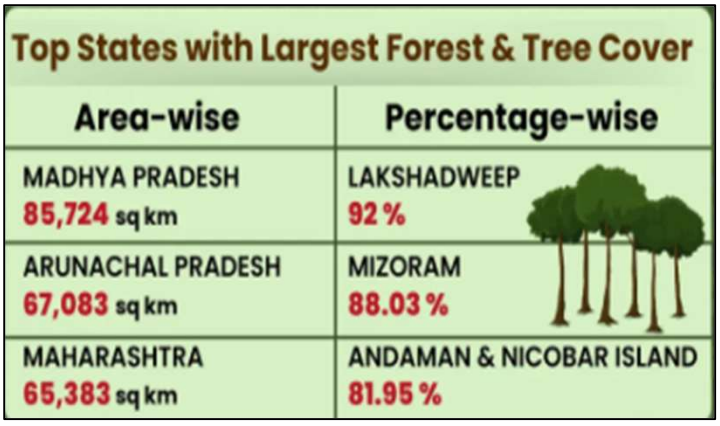
The ISFR 2023 reports West Bengal's Forest cover at 16,832.33 square kilometers, a slight decrease from 16,902.00 square kilometers recorded in ISFR 2019. According to the 2023 assessment, out of the state's 23 districts, forest cover has increased in 13 districts and decreased in 10 compared to ISFR 2021.



The districts showing a decline in forest cover are Cooch Behar, Dakshin Dinajpur, Darjeeling, Hooghly, Howrah, Murshidabad, North 24 Parganas, Purba Medinipur, South 24 Parganas, and Uttar Dinajpur. A major contributing parameteris the harvesting of tree crops by individual farmers on their privately owned lands located outside the officially recorded forest areas.



Decrease in Forest Cover due to Aquaculture in Krishna District, Andhra Pradesh



Class	Area (km^2)	Percentage of Geographical Area
Forest Cover	7,15,342.61	21.76
Tree Cover	1,12,014.34	3.41
Total Forest and Tree Cover	8,27,356.95	25.17
Scrub	43,622.64	1.33
Non Forest	24,16,489.29	73.50
Geographical Area	32,87,468.88	100.00

The new highway that is being made through the amazon rainforest (Source: BBC)

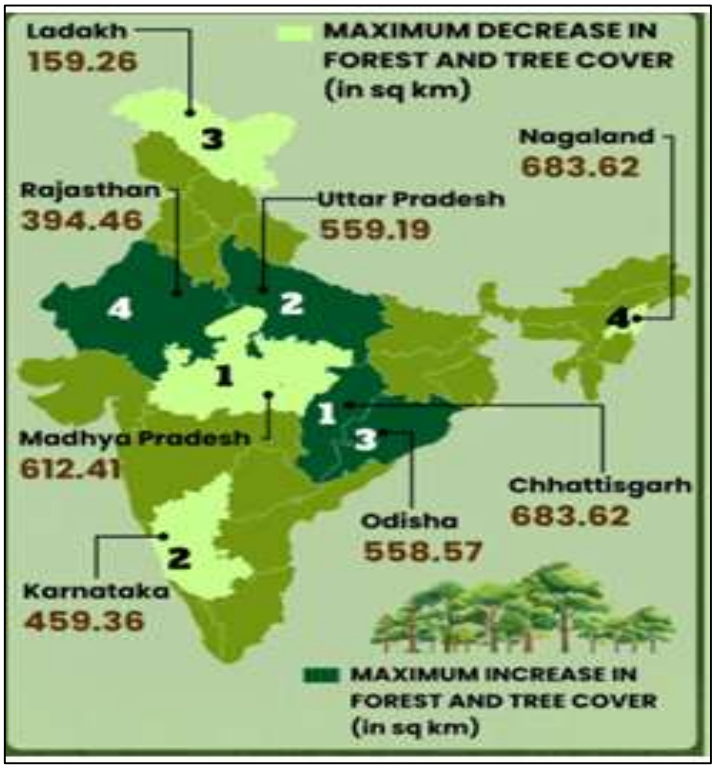


Fig.3. Status of Forest according to India State of Forest Report 2023 (Source: ISFR report 2023&www.pmfias.com)

The report highlights that major natural forest and eco-sensitive zone are threatened, and the country is moving towards more planted forest than natural ones. The report boasts of increased carbon sequestration due to an increase in plantation, but it remains silent on carbon unlocked due to increased deforestation.

Causes of Forest Degradation

Forest loss and degradation in India are driven by multiple interconnected factors. Infrastructure development, including the construction of roads, dams, mining activities, and large-scale industrial corridors such as the Delhi-Mumbai Industrial Corridor (DMIC), has led to significant deforestation by fragmenting habitats and converting forest land for other uses. Agricultural expansion is another major driver, where encroachments into forest areas and shifting cultivation practices, particularly in the Northeast and central regions of India, have contributed to forest degradation. Urbanization and increasing population pressures further accelerated the problem, with the demand for land for housing and commercial use, along with the extraction of timber and other forest resources, accelerating forest loss.

Additionally, climate change impacts such as altered rainfall patterns, rising temperatures, and increased frequency of forest fires have intensified forest degradation, making ecosystems more vulnerable and less resilient.

Ecological and economic impacts of forest degradation

Forest degradation has profound ecological and socio-economic consequences. The replacement of diverse natural forests with monoculture plantations adversely affects native biodiversity by reducing habitat quality for flora and fauna. Soil erosion, diminished water retention capacity, and disrupted hydrological cycles are some of the negative impacts on water and soil health resulting from forest loss. Moreover, forest-dependent communities, especially tribal groups, suffer greatly from these changes. Their livelihoods, food security, health, and cultural heritage are intricately linked to the forest ecosystem, making forest degradation a serious threat to their well-being and social and religious aspects.

Policies in forest management

Several policy measures have been instituted to address forest management and conservation, each with distinct implications. The Forest Rights Act (FRA) of 2006 was a breakthrough legislation aimed at correcting historical injustices by recognizing the rights of forest-dwelling communities. While FRA has empowered many tribal groups, its implementation has often faced delays and arbitrary rejections of claims, leading to uncertainties in forest governance and occasional conflicts. The Compensatory Afforestation Fund Act (CAMPA) of 2016 mandates afforestation efforts to compensate for forest diversion due to development projects. However, CAMPA has been criticized for replacing biodiverse, ecologically rich forests with monoculture plantations on non-forest lands, which fails to restore the original ecological functions. The National Forest Policy, originally framed in 1988 with a focus on ecological stability, has been under revision, and the draft policy of 2018 has drawn criticism for leaning towards commercialization of forests, potentially prioritizing revenue generation over ecological well-being. On the international front, India's commitment under the Bonn Challenge to restore 26 million hectares of degraded land by 2030 is a positive step, but concerns remain about the balance between genuine restoration and mere plantation drives that may not deliver the expected ecological benefits.

Technological and Community support in forest management

Technological tools like remote sensing and Geographic Information Systems (GIS) have become vital for monitoring forest changes over time, though their effectiveness is sometimes limited by issues such as spatial resolution and classification accuracy. Joint Forest Management (JFM) established the importance of involving local communities for the protection and management of forests, however the JFM has seen uneven success. Challenges such as weak Gram Panchayats with limited management capacity, disputes over equitable benefit sharing, lack of technical expertise for sustainable forest management, and external pressures like illegal encroachment and deforestation continue to undermine community-based forest governance. The recognition of Community Forest Resource Rights under the FRA represents a positive development, offering a legal basis for sustainable and democratic forest management when implemented effectively. These approaches investigate the potential of combining technology with grassroots participation for more resilient forest management.

Conclusion

India's forest cover story is complex and spreads beyond the simplistic narrative of increasing forest area. While reported gains in forest cover are encouraging, the quality, ecological integrity, and governance surrounding forests of the country remain a matter of concerns. To address the complex challenges of forest management there must be several reforms. Forest Survey of India (FSI) methodologies should incorporate methods to clearly distinguish between natural forests and plantations, improving the accuracy of forest assessments. Ecological restoration efforts should prioritize native species and community-led initiatives over commercial monoculture plantations to maintain the native biodiversity. Strengthening the implementation of FRA is essential, ensuring timely and fair recognition of community rights while involving local people in forest governance. Sustainable forest management requires a shift toward inclusive, science-driven, and ecologically sensitive policies that balance conservation with the rights and livelihoods of forest-dependent communities. Only through such an inclusive approach can India ensure that its forests continue to provide vital ecosystem services for both people and the planet in the long run.

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