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# Data Lab: Making sense of India's forest cover change, both gains and losses

New Delhi Written By: Sneha Swaminathan Updated: Apr 06, 2023, 12:01 PM IST



India's forest cover: An analysis Photograph:(Others)

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## STORY HIGHLIGHTS

WION Data lab takes a deep dive into India's forest cover statistics. Here are some of the key insights.

India ranked second in the world for the rate of deforestation after losing 6,68,400 hectares of forest cover between 2015 and 2020 and for witnessing the highest rise in deforestation in the last 30 years, according to a survey based consulting firm called Utility Bidder.



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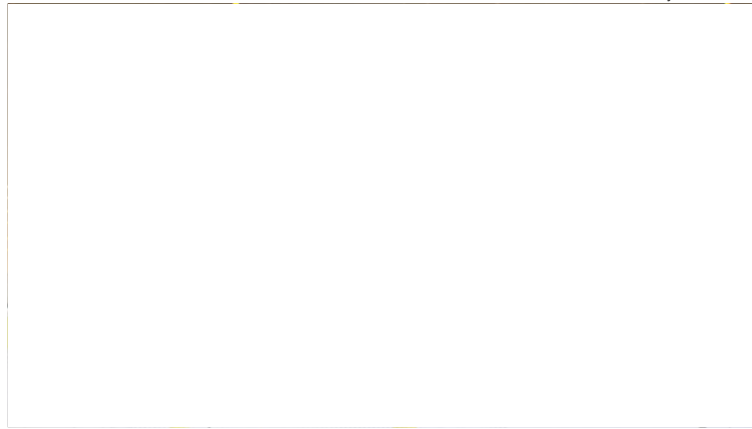
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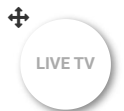
The study employed data collected between 1990 to 2000 and from 2015 to 2020 by the online data repository, *Our World In Data*, to illustrate the advancement of deforestation in 98 nations.

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Brazil and Indonesia came in first and third, with deforestation totalling 16,95,700 hectares in Brazil and 6,50,000 hectares in Indonesia, respectively.

With a difference of 2,84,400 hectares in forestry loss between 1990 and 2020, India also topped the list for the biggest increase in deforestation.



## Average deforestation (in hectares) between 2015 and 2020

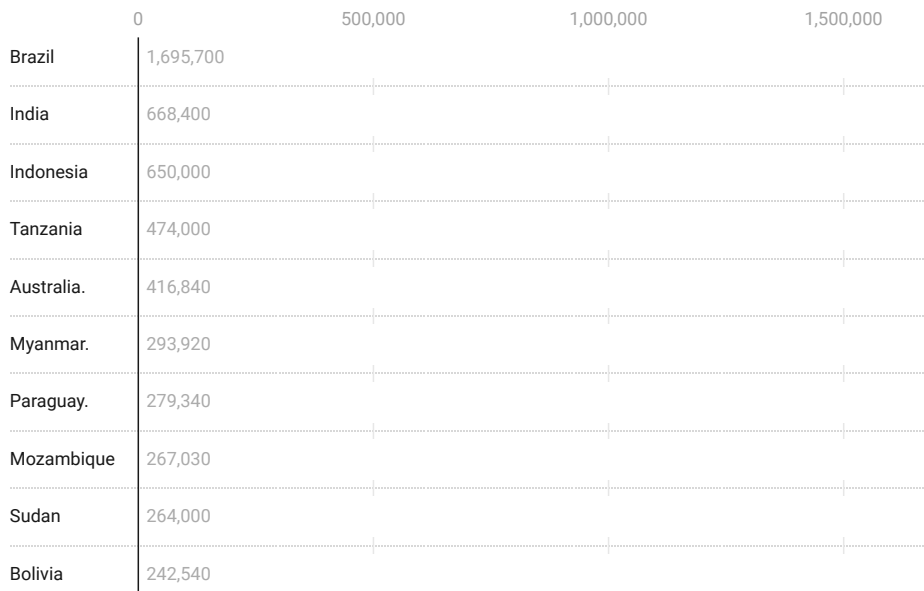


Chart: Sneha Swaminathan | WION • Source: [Utility Bidder](#) • Created with [Datawrapper](#)

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### Making sense of these figures: What does a loss in forest cover really mean?

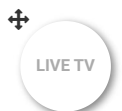
The Forest Survey of India (FSI) has been mapping India's forest cover since the early 1980s, even though it only started publishing its biennial State of Forest reports in 1987.

WION spoke to Dr Yogesh Gokhale, Senior Fellow at the Centre for Forest Management and Governance, Tata Energy Research Institute (TERI), in New Delhi, in order to examine the previously mentioned data and understand its complexities.

Comparable data on India's forest cover was made possible only in 2007, with the advent of wall-to-wall mapping by the interpretation of satellite data, says Dr Gokhale.

Based on FSI's 17th biennial assessment of India's forests, which covered the years from 2007 to the present, forests and tree cover constitute about 23-25 per cent of the nation's total land area. 18–19 per cent of which are designated as natural forests, 2–3 per cent as protected areas (wildlife sanctuaries), and the remainder as agro-forests (a collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land-management units as agricultural crops and/or animals).

Indian forest cover is broadly classified in four classes by the FSI, namely very dense forest, moderately dense forest, open forest and mangrove. The classification of the cover into dense and open forests is based on internationally adopted norms of classification.



|                         |   |
|-------------------------|---|
| Very dense Forest       | All Lands with tree cover (including mangrove cover) of canopy density of 70% and above                     |
| Moderately Dense forest | All lands with tree cover (including mangrove cover) of canopy density between 40% and 70% above            |
| Open forest             | All lands with tree cover (including mangrove cover) of canopy density between 10% and 40%                  |
| Scurb                   | All forest lands with poor tree growth mainly of small or stunted trees having canopy density less than 10% |
| Non Forest              | Any area not included in the above classes  |

**Source: Forest Survey of India**

Data provided by the Forest Survey of India reveals that in the two years between 2019 and 2021, the overall area covered by forests increased by 1,540 square kilometres.

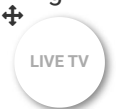
India also includes all plots having a tree canopy density of at least 10 per cent and a size of one hectare or greater, regardless of land use or ownership, in its calculation of forest cover.

"We also need to know the set classification of forests as per its canopy density," claims Dr Gokhale, "in order to understand the above mentioned loss of forest cover."

Most surveys, especially those that don't fall within the scope of FSI, solely include natural forests found in India as part of their analyses. A consistent decrease in numbers is observed exactly there. When the FSI generates data that shows an increase in forest area, they count both forests and tree cover within them. In general, other studies tend to discount tree cover (an estimated area comprising tree patches, which are less than one hectare and isolated trees outside the recorded forest).

"India is currently experiencing a trend where very dense forests are becoming moderately dense forests," says Dr Gokhale.

"In the India context, we are gaining moderately dense forests, but losing very dense forest areas. Unfortunately, only the loss gets highlighted," he adds. We must account for the significant portion of agroforestry tracks that are gaining ground outside of typical forest belts if we are to quantify growth holistically, he continues.



"More than 80 per cent of our domestic timber demand is satisfied by agroforestry plantation, and not from natural forest areas," he says. Agroforestry plantations are expanding, yet this growth is not being counted.

## **How do we revive our naturally dense forests?**

Only 9.96 per cent of India was covered by dense forests under Recorded Forest Areas in 2021, despite substantial planting by the forest department since the 1990s. Since the FSI measured 10.88 per cent dense forest in 1987, there has been a tenth decline in that figure.

The centrepiece initiative for increasing India's forest cover has been its compensatory afforestation programme, which aims to ensure that forest lands being "diverted" for non-forest purposes, like industrial or infrastructure development, are required to be accompanied by afforestation effort on at least an equal area of land.

"We have already reached an alarming rate of deforestation which requires human intervention to restore the delicate balance of the environment," says Dr Neha Sharma, Assistant professor of Environment sciences at Lady Shri Ram College for Women, Delhi University.

To restore biodiversity and ecological balance, the creation of artificial forests have become a necessity in the present world, she adds.

Additionally, as part of its international climate change commitments, India has promised to increase its forest and tree cover to ensure that they are able to absorb an additional amount of 2.5 billion to 3 billion tonnes of carbon dioxide equivalent by 2030.

## **Questionable compensatory afforestation? A relook at India's contentious proposal of bringing down a forest on the Great Nicobar Island and compensating the loss with a jungle safari in Haryana**

India's forest conservation law requires that trees be planted over an equal amount of non-forest land to make up for any ecological loss when a forest is cut down for industrial or development purposes. The organisation responsible for the deforestation has to send funds to an administrative body, which then directs them to the organisation responsible for planting trees. Compensatory afforestation is the term used to describe this procedure.

A particularly problematic idea under this compensatory act is the plan to use funds obtained for compensatory afforestation in Nicobar to build a jungle safari in Haryana.

To begin with, the two territories are located 2,400 kilometres apart in climatically distinct regions. Experts point out that the geographical isolation of the Nicobar Islands has endowed them with a unique biodiversity; of the 2,200 varieties of plants recorded there, 200 are rare native species, and 1,300 do not occur in mainland India.

"Recreating a forest like the one in the Great Nicobar in Haryana is practically impossible," says Dr Gokhale.

Despite the fact that there is no legal prohibition against compensatory afforestation funds raised in one state being used in another, experts point out that this is not the case with the Nicobar Islands.

Environmentalists claim it is a prime example of how India's compensatory afforestation programmes are diverging from their intended purpose of addressing ecological demands and allowing governments to exploit forests for financial gain.

