Note on the Conceptual Differences in the Definition of "Forests" across India's Official Data Sources

1.   The terms 'Forest Cover' and 'Forest Area' are the two most commonly used terms to describe the extent of the forest. Both the terms, 'Forest Cover' and 'Forest Area' denote extent of the forests with different meanings. The term 'Forest Cover' is used to define the expanse of forest resources in a region primarily based on the tree canopy density, while the term 'Forest Area' is used to denote the areas having legal standing, i.e., recorded as forests in government records or maintained as forests. In addition, there exists a variation in the definition followed by different Indian official agencies in the measurement and description of forests. These differences have been elucidated in the following paragraphs.

Forest Cover

2.   Definition of 'Forest Cover' as followed by the Forest Survey of India (FSI)[1]: It includes all lands having trees more than one hectare in area with tree canopy density of more than 10 % irrespective of ownership, legal status of the land and species composition of trees. The assessment of the 'Forest Cover' includes tree orchards, bamboos, palms etc. within recorded forests, on other government lands, private, community or institutional lands.

3.   Forest cover is classified by FSI in terms of canopy density classes as follows:

Class	Description
Very Dense Forest	All lands with tree canopy density of 70% and above
Moderately Dense Forest	All lands with tree canopy density of 40 % and more but less than 70%
Open Forest	All lands with tree canopy density of 10% and more but less than 40%
Scrub	Forest lands with canopy density less than 10%
Non-Forest	Lands not included in any of the above classes. (includes water)

4.   Definition of 'Forest Cover' as followed by Indian Space Research Organization (ISRO), National Remote Sensing Centre (NRSC)[2]: The category, Forest, in the Land

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[1] https://fsi.nic.in/isfr19/vol1/chapter2.pdf

[2] https://bhuvan-app1.nrsc.gov.in/2dresources/thematic/2LULC/lulc1112.pdf

Use Land Cover (LULC) mapping on 1:50,000 scale project is adopted mainly from the UN-FAO definition of forests and includes all patches with canopy density of more than 10% greater than 0.5 hectares in size, which are not categorized under any other predominant land use. Thus, forests are determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 m. The 'Forest' definition does not include trees/woody vegetation under orchards/plantation crops. The definition was standardized to become amenable for delineation of forest cover class by using Remote Sensing data as part of the Land Use/Land Cover Classification system adopted. Forests are further categorized in the LULC as:

(i)   Evergreen/Semi-evergreen Forests

(ii)   Deciduous Forests

(iii)   Forest Plantation

(iv)   Scrub Forests

(v)   Littoral/ Swamp/Mangrove Forests

Forest Area

5.   Definition of 'Forest' in Land Use Statistics (LUS)[3]: The Ministry of Agriculture and Farmer's Welfare (MoAFW) compiles and releases Land Use Statistics according to a nine- fold classification. In this dataset, 'Forest' includes all land classified either as forest under any legal enactment, or administered as forest, whether State-owned or private, and whether wooded or maintained as potential forest land. The area of crops raised in the forest and grazing lands or areas open for grazing within the forests remain included under the 'Forest Area'.

6.   'Recorded Forest Area[4], defined by Forest Survey of India (FSI): It is defined as "all such lands which have been notified as forest under any Government Act or Rules or recorded as 'forests' in the Government Records". Recorded forest areas largely consist of areas designated as Reserved Forest (RF) or Protected Forests (PF) under the provisions of Indian Forest Act, 1927 or its counterpart State Acts. Besides these, the recorded forest area may include all such areas, which have been recorded as forests under any State Act or local laws or any revenue records.

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[3] https://eands.dacnet.nic.in/LUS_2013-14/Covrpage.pdf
[4] https://fsi.nic.in/isfr19/vol1/chapter1.pdf

7.	In terms of globally accepted standards, the extent of forests is denoted by 'Forest Area' by the Food and Agriculture Organization (FAO)[5]. It is defined as "land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ." It does not include land that is predominantly under agricultural or urban land use.

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[5] http://www.fao.org/3/am665e/am665e.pdf