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A note on ethnobotanical studies of threatened trees species in Barak valley, Assam, northeast India: A comprehensive review

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ABSTRACT

The Barak valley is located in the southern part of Assam (India) and the phytogeographically, the valley belongs Indo-Burma biodiversity hotspot, harbours rich arboreal diversity and a strong tradition of ethnobotanical knowledge among certain local communities and the different tribes. The present study is to provide a comprehensive review that synthesizes available information on the ethnobotanical uses of threatened species and conservation status of tree species. A total of 290 tree species belonging to 206 genera and 70 families have been recorded from the valley, reflecting remarkable floristic richness. These tree species play a crucial role in the livelihood such as, providing food, medicine, timber, fuelwood, fodder, and cultural resources. IUCN Red list assessment reveals that as the threatened categories, 2% (7 species) Vulnerable, 3% (8 species) Endangered, and 1% (2 species) Critically Endangered and the majority of the species falls under the Least Concern category of 72% (206 species), while 16% (45 species) are Not Evaluated and 4% (10 species) are Data Deficient. The threatened species indicating that due to the increasing of anthropogenic pressure, habitat loss, overexploitation, illegal plantation, and lack of awareness on forest ecosystem are major threats to tree diversity in the valley. This review highlights the ethnobotanical knowledge of threatened species with scientific conservation strategies. The study establishes a valuable baseline dataset for ethnobotanical, future ecological monitoring, conservation planning, and sustainable utilization of tree resources in the valley.

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INTRODUCTION

Ethnobotany is an interdisciplinary science that explores the complex relationships between plants and human societies, particularly focusing on the traditional knowledge related to the use of plants for food, medicine, shelter, and cultural practices. The term ethnobotany was first introduced by the American botanist John W. Harshberger in 1896. In simple terms, ethnobotany can be summarized by four key words: people, plants, interactions, and uses (Nadaf *et al.*, 2023).

Tree species are key components of any forest ecosystem that act as buffers for the earth, supporting a myriad of life forms and contributing to rich and healthy forest. Trees are recognized as one of the most precious gifts of nature and true saviours of the Earth. They provide a wide range of economic benefits along with numerous environmental services, including climate regulation, soil conservation, carbon sequestration, and habitat support (Bhatt *et al.*, 2020). In forest-dominated regions such as North-east India, ethnobotanical knowledge forms the backbone of rural healthcare systems and subsistence economies. Tree species, due to their longevity and multifunctional utility, occupy a central position in traditional plant use systems.

The Barak valley, comprising the districts of Cachar, Karimganj (Sribhumi), and Hailakandi in southern Assam, represents one of the ecologically significant regions of North-east India.

Geographically, the valley lies within the Indo-Burma biodiversity hotspot and is characterized by sub-tropical evergreen, semi-evergreen, and moist deciduous forests. The region supports diverse communities, indigenous tribes and sub-tribes such as Reang, Chorei, Khasi, Marg, Dimasa, Manipuri etc., who depend heavily on forest resources for their daily needs. Over generations, these communities have developed extensive indigenous knowledge regarding the identification, utilization, and management of certain tree species.

Tree species in the Barak valley serve multiple ethnobotanical purposes, including medicinal

applications for treating ailments such as fever, gastrointestinal disorders, skin diseases, diabetes, and respiratory problems. Apart from medicinal uses, trees provide edible fruits, leaves, bark, stems, roots and seeds, timber for construction, fuelwood, fodder for livestock, and raw materials for tools and handicrafts. Many species also hold religious and cultural significance, being associated with rituals, festivals, and sacred groves. Despite this rich biological and cultural heritage, tree diversity in the Barak valley is facing increasing threats. Rapid population growth, agricultural expansion, illegal logging, and infrastructure development have led to significant habitat degradation and forest fragmentation. The present climate change has also begun to influence species distribution and regeneration patterns.

Assessing the conservation status of tree species is essential for understanding the extent of biodiversity loss and for prioritizing conservation efforts. Threatened species are facing a high risk of extinction in the near future. The International Union for Conservation of Nature (IUCN) Red List categories provide a globally recognized framework for evaluating extinction risk. In the Barak Valley, although a majority of tree species are categorized as Least Concern (LC), the presence of Vulnerable (VU), Endangered (EN), and Critically Endangered (CR) taxa is a matter of serious concern. These threatened species often have high ethnobotanical value, making them more susceptible to overexploitation.

Assam harbors a rich diversity of plant species owing to its varied vegetation and forest types. The state supports 3,854 taxa (including infraspecific taxa) belonging to 1,394 genera and 236 families. Of these, 2,752 taxa are dicotyledons, 1,080 are monocotyledons, and 22 taxa belong to gymnosperms. Notably, 871 taxa fall under various conservation categories, including 167 endemic taxa (Barooah and Ahmed, 2014). The study of vegetation in Assam was first initiated by F. Buchanan-Hamilton in 1920 through his early observations. Later, J. D. Hooker's Flora of British India (Hooker, 1875) documented several plant species from Assam and Northeast India.

However, the various floristic works done in the Assam and the Barak valley such as (Kanjilal *et al.*, 1934), recorded only 394 species in the flora of Assam from the district of Karimganj (Sribhumi), 321 species from Cachar district and Flora of Barak valley with their Economic Utility by (Das *et al.*, 2013), here a total of 596 species of herbaceous flora belonging to 142 families were enumerated. Some of the other work on floristic of southern parts of Assam includes (Bora and Bhattacharyya, 2002; Nath, 2007; Pasha *et al.*, 2011; Baruah, 2013; Barbhuiya *et al.*, 2013; Debnath and Choudhury, 2013), on phytosociology by (Rabha, 2010) and (Borogayary *et al.*, 2018). Most of the floristic works of the Barak valley were mainly on the herbaceous flora such as Pteridophytes, Orchids, Bamboo, as compared to trees species. However, Trees diversity is the major component of the any forest ecosystem (Bhatt *et al.*, 2016). But no research work has been carried on the ethno-medico- botanical uses of tress species from the valley.

The documenting ethnobotanical uses alongside conservation status are crucial for promoting sustainable resource management. Traditional knowledge, when integrated with scientific conservation strategies, can contribute significantly to biodiversity conservation. Such studies not only preserve cultural heritage but also support policy formulation, community-based conservation, and sustainable livelihood development. The present review aims to compile and analyse the present and existing information on the ethnobotanical uses and conservation status of tree species in the Barak valley. By providing a comprehensive review of ethnobotanical threatened tree species with their scientific botanical names, families, local/vernacular names, phenology, parts used, and conservation status (LC- Least Concern; NE- Not Evaluated; DD- Data Deficient; NT- Not Threatened; VU- Vulnerable; EN- Endangered and CR). This study seeks to establish a baseline for future ethnobotanical research, conservation planning, and sustainable utilization of forest resources in the valley.

MATERIALS AND METHODS

Study area

The Barak valley is geographically located between 23°N-24°N latitudes and 92°E-93°E longitudes.

It comprises three districts of southern Assam, namely Cachar, Karimganj (Sribhumi), and Hailakandi (Fig.1). The valley covers a total geographical area of about 6,922 km² and is bounded by the North Cachar Hills and Dima Hasao district to the north, Mizoram to the south, Manipur to the east, and Bangladesh and Tripura to the west (Indian State of Forest Report, 2019).

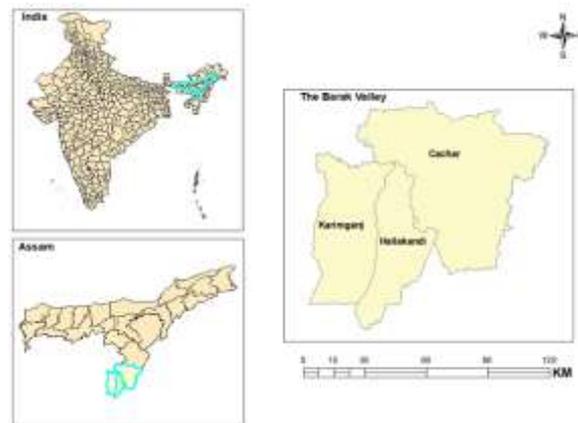


Fig. 1. The study area map (Barak valley)

The total forest cover of the valley is approximately 1,630 km², which constitutes about 23% of its total geographical area. The valley includes one notified Wildlife Sanctuary, the Borail Wildlife Sanctuary, located in Cachar district, and twelve Reserve Forests. Of these, six are situated in Karimganj (Sribhumi) district- Badsahitila RF, Longai RF, Singla RF, Duhalia RF, Tilbhoom RF, and Patheria RF; two in Hailakandi district- Innerline RF and Katakhal RF; and four in Cachar district- Barak RF, Borail RF, Sonai RF, and Upper Jiri RF (Barbhuiya *et al.*, 2013). In addition, the valley has one proposed Wildlife Sanctuary, the Barak Bhuban Wildlife Sanctuary (located between the Barak and Sonai rivers), and one proposed Reserve Forest, Adarkona RF, in Karimganj (Sribhumi) district.

Geologically, the valley is younger than the Brahmaputra valley. The region is drained by three major rivers- the Barak, Sonai, and Kushiara- along with their numerous tributaries. The valley is predominantly an alluvial plain, composed of pebbles, sand, silt, and clay, often interspersed with mixtures of sand and clay containing decomposed vegetable matter.

Methods

Extensive fieldwork and a relevant review of literature were carried out over a period of nearly one year, covering almost all seasons of the year. Investigations were conducted through interviews with village heads (Gaobura), village medicine men (Ojha), and elderly members of the community, along with visits to local marketplaces. The possible specimens were collected, packed in polythene bags, dried using a standard herbarium press, and processed for mounting on herbarium sheets following the method of (Jain and Rao, 1977).

The collected data were systematically documented and tabulated, highlighting the botanical names, families, common name, parts used and conservation status of the threatened trees species. The nomenclature of botanical names was confirmed by the standard Plants of the World Online (POWO) (<http://powo.science.kew.org>) and World Flora Online (<http://www.worldfloraonline.org>) databases. The conservation status of each taxon was obtained using the IUCN Red List of Threatened Species database

(<https://www.iucnredlist.org/>). The medicinal plants have been arranged according to the parts used, along with their modes of use, and are provided with the correct taxonomic nomenclature followed by the vernacular names. The abbreviations representing different communities have also been included, namely as Bengali (Beng), Assamese (Assm).

RESULTS AND DISCUSSION

The review documented a total of 290 tree species belonging to 206 genera and 70 families from the Barak Valley, highlighting the region's exceptional arboreal diversity. Dominant families included Fabaceae and Euphorbiaceae, all of which are well known for their ecological and economic significance in tropical and subtropical forest ecosystems. Among them, as the threatened species the family fabaceae and lauraceae was found to be the most extensively used for the treatment of various human ailments in the valley. The botanical names of the species, along with their families, local names, phenology, parts used, mode of uses and conservation status are presented (Table 1).

Table 1. List of ethnobotanical threatened tree species recorded from Barak valley, Assam (India) with their scientific names, families, local/vernacular names, phenology, parts used, and conservation status

Sl	Scientific names	Family	Local names	Phenology	Parts used	Mode of uses	Con. Status
1	<i>Macropanax undulates</i> Seem.	Araliaceae Juss.	Muskanda (Beng)	Summer-Spring	Leaves and roots	Leaves juices used in traditional practices for treating stomach troubles, ulcers, and digestive issues and roots frequently employed in the preparation of medicinal pastes applied for pain relief, particularly in treating muscular pain, rheumatic pain, or joint issues.	VU
2	<i>Mesua ferrea</i> L.	Clusiaceae Lindl.	Nahor (Assm) Nageswar (Beng)	March-October	Seeds	Oil extract from the seeds is applied to treat skin infections, including sores, scabies, and general itchiness.	VU
3	<i>Dipterocarpus turbinatus</i> Gaertn.	Dipterocarpaceae Blume	Garjan (Beng) Kuroil Sal (Assm)	March-August	Resin	Applied to treat skin infections, ringworm, eczema, and ulcers.	VU
4	<i>Glochidion sphaerogynum</i> Kurz	Euphorbiaceae Juss.	Kachua (Beng)	December-October	Leaves and bark	Leaves and bark directly to treat various ailments, which often include skin diseases, stomach problems, and wounds and used as an anti-viral agent, or to treat conditions like fever and diarrhoea.	VU

5	<i>Alseodaphne owdeni</i> R. Parker	Lauraceae Juss.	Pani-kanda (Assm) Jangli Aam (Beng)	May	Bark and leaves	Bark and leaves are useful in diarrhea.	VU
6	<i>Alseodaphne petiolaris</i> (Meisn.) Hook.f.		Ban-hanwalu (Beng)	October-May	Trunk	Not found	EN
7	<i>Aglaia perviridis</i> Hiern.	Meliaceae Juss.	Sabuj Amoor (Beng)	March-December	Leaves and roots	Leaves and roots extracts used as an anti-inflammatory and analgesic and used as an anti-tumor/anticancer properties.	EN
8	<i>Ixora malabarica</i> (Dennst.) Mabb.	Rubiaceae Juss.	Rangan (Beng)	June	Roots and flowers	A decoction of the roots and leaves is used to treat diarrhea and blood dysentery.	EN
9	<i>Terminalia myriocarpa</i> Van Heurck & Müll. Arg.	Combretaceae R.Br.	Panisaj (Beng)	August-January	Bark and fruits	The bark and fruits used in traditional medicine for treating dysentery and diarrhea and treat of digestive issues.	EN
10	<i>Elaeocarpus lanceifolius</i> Roxb.	Elaeocarpaceae Juss. ex DC.	Jalpai (Beng)	June-September	Fruits	Used for management of high blood pressure and	EN
11	<i>Dalbergia sericea</i> Spreng.	Fabaceae Lindl.	Shisu (Beng; Assm)	April-September	Pods	Uses for treating skin ailments.	EN
12	<i>Ormosia robusta</i> (Roxb. ex Wight) Voigt		Ghorachokhashim (Beng)	April-July	Bark	Bark used as a traditional medicine for treating jaundice.	CR
13	<i>Prunus ceylanica</i> Miq.	Rosaceae Juss.	Atari Lata (Beng)	July-February	Bark and leaves	Bark and leaf extracts are used to treat gastric troubles, stomach ulcers, and stomachache.	EN
14	<i>Palaquium polyanthum</i> Engl.	Sapotaceae Juss.	Tali Gach (Beng)	May	Latex	Used for treating infections or injuries.	EN
15	<i>Aquilaria malaccensis</i> Lam.	Thymelaeaceae Juss.	Agaru (Beng)	April-September	Resin	Used for stimulant, tonic, and treating ailments like rheumatism, arthritis, and skin disorders.	CR

LC- Least Concern; NE- Not Evaluated; DD- Data Deficient; NT- Not Threatened; VU- Vulnerable;

EN- Endangered and CR= Critically Endangered), Con. Status= Conservation status and Abbr. for Assamese (Assm); Bengali (Beng)

Ethnobotanical analysis revealed that leaves are the most frequently used plant part in traditional medicine, compared to bark and fruits (Table 2). Overall, bark, roots, fruits, Resin and seeds were the most commonly utilized plant parts in the Barak valley. Leaves were particularly important due to their easy availability and high concentration of bioactive compounds. Several tree species are traditionally used to treat common ailments such as fever, dysentery, jaundice, skin infections, and inflammatory conditions. In addition, fruit-bearing trees contribute significantly to nutritional security, while timber-yielding species support rural housing and small-scale industries, underscoring the socio-economic importance of tree diversity in the Barak valley.

Conservation assessment showed that 72% (206 species) are categorized as Least Concern, indicating relatively stable populations. However, 16% (45 species) are Not Evaluated and 4% (10 species) Data Deficient, suggesting gaps in scientific assessment and monitoring.

Importantly, the most threatened species were 2% (7 species) Vulnerable, 3% (8 species) Endangered, and 1% (2 species) Critically Endangered. The occurrence of threatened species clearly indicates that rising anthropogenic pressure, habitat destruction, overexploitation, illegal plantation practices, and lack of awareness on forest to tree diversity in the valley.

Table 2. List of families with the number of representing genera and taxa of tree species with parts used and their conservation status in the Barak valley

Sl	Family	Genus	Scientific name	Habit	Phenology	Use parts	CS
1	Actinidiaceae Engl. & Gilg.	<i>Saurauia</i> Wild.	<i>Saurauia cerea</i> Griff. ex Dyer.	Tree	July- November	Leaves	LC
2			<i>Saurauia roxburghii</i> Wall.	Tree	March- August	Leaves and stems	LC
3	Anacardiaceae R. Br.	<i>Drimycarpus</i> Hook. F.	<i>Drimycarpus</i> <i>racemosus</i> (Roxb.) Hook. f.	Tree	April- June	Bark and leaves	NE
4		<i>Holigarna</i> Buch-Ham. ex Roxb.	<i>Holigarna caustica</i> (Dennst.) Oken	Tree	December- June	Fruits and barks	DD
5		<i>Lannea</i> A. Rich in Guillem.	<i>Lannea</i> <i>coromandelica</i> (Houtt) Merr.	Tree	February- June	Bark, leaves, and resin	LC
6		<i>Mangifera</i> L.	<i>Mangifera indica</i> L.	Tree	December- June	Bark, leaves and fruit	DD
7		<i>Rhus</i> L.	<i>Rhus chinensis</i> Mill	Shrub or Tree	August- October	Fruits, leaves, and roots	LC
8			<i>Rhus succedanea</i>	Tree	March- December	Fruits, sap/resin, and leaves.	LC
9		<i>Spondias</i> L.	<i>Spondias pinnata</i> (L.f.) Kurz.	Tree	March- December	Fruits, bark, and leaves	LC
10	Annonaceae Juss.	<i>Alphonsea</i> Hook. f. & Thomson	<i>Alphonsea lutea</i> Hook. f. & Thomson	Tree	March- September	Ripe fruits, leaves, and bark	LC
11			<i>Alphonsea</i> <i>ventricosa</i> Hook. f. & Thomson	Tree	March- September	Woods and fruits	DD
12		<i>Annona</i> L.	<i>Annona squamosa</i> L.	Tree	June- September	Leaves, seeds, and fruits	LC
13		<i>Cyathocalyx</i> Hook. f. & Thomson	<i>Cyathocalyx</i> <i>martabanius</i> Hook. f. & Thomson	Tree	April- November	Not information	NE
14		<i>Dasymachalon</i> Dalla Torre & Harms	<i>Dasymachalon</i> <i>longiflorum</i> (Roxb.) Finet & Ganep	Shrub or Tree	April- December	Leaves	LC
15		<i>Mitrephora</i> Hook.f. & Thomson	<i>Mitrephora</i> <i>tomentosa</i> Hook.f. & Thomson	Tree	May-October	Stem barks and leaves	LC
16		<i>Polyalthia</i> Blume	<i>Polyalthia jenkinsii</i> (Hook.f. & Thomson) Hook.f. & Thomson	Tree	August-June	Stems	LC
17	Apocynaceae Juss.	<i>Alstonia</i> R.Br.	<i>Alstonia scholaris</i> (L.) R.Br.	Tree	June- December	Stems bark	LC
18		<i>Phumeria</i> L.	<i>Phumeria rubra</i> L.	Tree	June- December	Barks and milky latex	LC
19		<i>Tabernaemontana</i> L.	<i>Tabernaemontana</i> <i>divaricata</i> (L.) R.Br. ex Roem. & Schult.	Shrub or Tree	April- November	Leaves and milky latex	LC
20		<i>Wrightia</i> R.Br.	<i>Wrightia coccinea</i> Sims.	Tree	January- December	Barks and fruits	LC
21	Aquifoliaceae Bercht. & J.Presl	<i>Ilex</i> L.	<i>Ilex excelsa</i> (Wall.) Voigt	Tree	April- November	Leaves, woods and berries	LC
22			<i>Ilex godajam</i> (Colebr.) Wall. ex Hook.f.	Shrub or Tree	January- September	Leaves and barks	LC
23	Araliaceae Juss.	<i>Aralia</i> L.	<i>Aralia foliolosa</i> Seem.	Shrub or Tree	September- March	Leaves and roots	DD
24			<i>Aralia thomsonii</i> Seem.	Shrub or Tree	May- November	Leaves, roots and rhizomes	LC
25		<i>Brassaiopsis</i> Decne. & Planch.	<i>Brassaiopsis</i> <i>glomerulata</i> Regel	Tree	June- February	Leaves and barks	LC
26		<i>Macropanax</i> Miq.	<i>Macropanax</i> <i>undulata</i> Seem.	Tree	Summer- Spring	Leaves and roots	VU
27		<i>Schefflera</i> J.R.Forst. &	<i>Schefflera venulosa</i>	Tree	March-June	Leaves and barks	LC

28		G.Forst. <i>Trevesia</i> Vis.	Harms. <i>Trevesia palmata</i> Vis.	Tree	October-July	Leaves, buds and shoots	LC
29	Arecaceae C.H. Schultz	<i>Areca</i> L.	<i>Areca catechu</i> L.	Tree	April- September	Seeds	LC
30		<i>Arenga</i> Labill.	<i>Arenga westerhoutii</i> Griff.	Tree	June- September	Seeds and stems	LC
31		<i>Caryota</i> L.	<i>Caryota urens</i> L.	Tree	June- September	Trunk and leaves bases	LC
32		<i>Licuala</i> Wurmmb	<i>Licuala peltata</i> Roxb. ex Buch.-Ham.	Tree	June- September	Leaves	NE
33	Betulaceae Gray	<i>Betula</i> L.	<i>Betula alnoides</i> Buch.- Ham.	Tree	October-May	Barks	LC
34	Bignoniaceae Juss.	<i>Oroxylum</i> Vent	<i>Oroxylum indicum</i> (L.) Vent	Tree	January- March	Roots, barks and seeds	LC
35		<i>Pajanelia</i> DC.	<i>Pajanelia longifolia</i> Schum	Tree	December- May	Leaves and barks	LC
36		<i>Stereospermum</i> Cham.	<i>Stereospermum</i> <i>chelonoides</i> DC.	Tree	April-Cold Season	Roots and barks	LC
37			<i>Stereospermum</i> <i>tetragonum</i> DC.	Tree	May-July	Roots, stems and barks	LC
38	Bixaceae Kunth	<i>Bixa</i> L.	<i>Bixa orellana</i> L.	Tree	October- December	Seeds	LC
39	Boraginaceae Juss.	<i>Cordia</i> L.	<i>Cordia myxa</i> L.	Shrub or Tree	May- December	Fruits, barks and leaves	LC
40			<i>Cordia</i> <i>fragrantissima</i> Kurz	Tree	November- April	Fruits and barks	LC
41		<i>Ehretia</i> P.Browne	<i>Ehretia acuminata</i> R.Br.	Tree	March-Cold Season	Barks, leaves and fruits	LC
42	Burseraceae Kunth.	<i>Protium</i> Burm.f.	<i>Protium serratum</i> Engl.	Tree	April-June	Barks, leaves and fruits	LC
43		<i>Canarium</i> L.	<i>Canarium</i> <i>resiniferum</i> Bruce ex King	Tree	April-Cold Season	Resin, barks and leaves	DD
44			<i>Canarium</i> <i>bengalense</i> Roxb.	Tree	May-October	Resin and bark	LC
45		<i>Garuga</i> Roxb.	<i>Garuga pinnata</i> Roxb.	Tree	March- October	Resin and bark	LC
46	Capparaceae Juss.	<i>Capparis</i> L.	<i>Capparis multiflora</i> Hook.f. & Thomson	Shrub or Tree	June- December	Fruits, leaves and flowers	LC
47		<i>Crateva</i> L.	<i>Crateva religiosa</i> G.Forst	Shrub or Tree	March- September	Stems, bark and roots	LC
48	Caprifoliaceae Juss.	<i>Viburnum</i> L.	<i>Viburnum</i> <i>cylindricum</i> Buch.- Ham. ex D.Don	Shrub or Tree	June-October	Leaves and twigs	LC
49	Caricaceae Dumort.	<i>Carica</i> L.	<i>Carica papaya</i> L.	Tree	March- December	Fruits, leaves and seeds	DD
50	Celastraceae	<i>Bhesa</i> Buch.-Ham. ex Arn.	<i>Bhesa robusta</i> (Roxb.) Ding Hou	Tree	Not seen	Seeds and fruits	LC
51		<i>Microtropis</i> Wall.	<i>Microtropis discolor</i> (Wall.)Wall.	Shrub or Tree	September- March	Leaves, bark and fruits	LC
52	Clusiaceae Lindl.	<i>Calophyllum</i> L.	<i>Calophyllum</i> <i>polyanthum</i> L.	Tree	April-October	Seeds	NT
53		<i>Garcinia</i> L.	<i>Garcinia cowa</i> Roxb.	Tree	May-October	Leaves and fruits	LC
54			<i>Garcinia morella</i> Desr.	Tree	February- August	Resin and fruits	LC
55			<i>Garcinia</i> <i>xanthochymus</i> Hook.f. ex T. T. Anderson	Tree	March- November	Fruits, bark and leaves	LC
56		<i>Mesua</i> L.	<i>Mesua ferrea</i> L.	Tree	March- October	Seeds	VU
57	Combretaceae R.Br.	<i>Anogeissus</i> (DC.) Wall. ex Guillem. & Perr.	<i>Anogeissus</i> <i>aciminata</i> (Roxb. ex DC.) Wall. Ex Guillem. & Perr.	Tree	February- March	Leaves and bark	LC
58		<i>Terminalia</i> L.	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Tree	March-July	Fruits	LC

59			<i>Terminalia chebula</i> Retz.	Tree	May-December	Fruits	LC
60			<i>Terminalia myriocarpa</i> Van Heurck & Müll. Arg.	Tree	August-January	Bark and fruits	EN
61	Cornaceae Bercht. & J.Presl	<i>Alangium</i> Lam.	<i>Alangium barbatum</i> (R.Br. ex C. B. Clarke) Baill. ex Kuntze	Shrub or Tree	December-May (Through out the year)	Leaves	LC
62		<i>Cornus</i> L.	<i>Cornus capitata</i> Wall.	Shrub or Tree	May-	Leaves, bark and fruits	LC
63		<i>Nyssa</i> L.	<i>Nyssa javanica</i> Wangerin	Tree	April-October	Fruits	DD
64	Crypteroniaceae A.DC.	<i>Crypteronia</i> Blume	<i>Crypteronia paniculata</i> Blume	Tree	July-November	Leaves, fruits and bark	LC
65	Datisceae Dumort.	<i>Tetrameles</i> R.Br.	<i>Tetrameles nudiflora</i> R.Br.	Tree	March-May	Bark	LC
66	Dichapetalaceae Baill.	<i>Dichapetalum</i> Thouars	<i>Dichapetalum gelonioides</i> (Roxb.) Engl.	Shrub or Tree	March-October	Fruits and leaves	LC
67	Dilleniaceae Salisb	<i>Dillenia</i> L.	<i>Dillenia indica</i> L.	Tree	July-January	Fruits	LC
68			<i>Dillenia pentagyna</i> Roxb.	Tree	April-September	Bark and fruits	NE
69	Dipterocarpaceae Blume	<i>Dipterocarpus</i> Gaertn.f.	<i>Dipterocarpus retusus</i> Blume	Tree	May-January	Resin	NE
70			<i>Dipterocarpus turbinatus</i> Gaertn.	Tree	March-August	Resin	VU
71		<i>Shorea</i> Roxb. ex Gaertn.f.	<i>Shorea robusta</i> Gaertn.	Tree	January-July	Bark and seeds	NT
72	Ebenaceae Gürke	<i>Diospyros</i> L.	<i>Diospyros cacharensis</i> (Das & P. C. Kanjilal) H.B.Naithani	Tree	April-September	Not information	NE
73			<i>Diospyros montana</i> Roxb.	Tree	March-June	Leaves, bark and fruits	LC
74			<i>Diospyros racemosa</i> Roxb.	Tree	February-May	Fruits and bark	LC
75	Elaeocarpaceae Juss. ex DC.	<i>Sloanea</i> L.	<i>Sloanea sterculiacea</i> Rehder & E.H.Wilson var. <i>assamica</i> (Benth.) Coode	Tree	October-April	Fruits and seeds	LC
76		<i>Elaeocarpus</i> L.	<i>Elaeocarpus floribundus</i> Blume	Tree	May-December	Fruits and leaves	LC
77			<i>Elaeocarpus lanceifolius</i> Roxb.	Tree	June-September	Fruits and seeds	EN
78			<i>Elaeocarpus petiolatus</i> (Jacq.)Wall.	Tree	August-December	Leaves, bark and roots	LC
79	Escalloniaceae R.Br. ex Dumort.	<i>Itea</i> L.	<i>Itea macrophylla</i> Wall.	Tree	April-June	Leaves	NE
80	Euphorbiaceae Juss.	<i>Antidesma</i> Burm. Ex L.	<i>Antidesma bunius</i> Spreng.	Shrub or Tree	March-November	Fruits and leaves	LC
81			<i>Antidesma ghesaembilla</i> Gaertn.	Tree	March-January	Fruits and leaves	NE
82		<i>Aporosa</i> Blume	<i>Aporosa octandra</i> (Buch.-Ham. ex D.Don) A.R.Vickery	Tree	January-December	Bark and leaves	LC
83		<i>Balakata</i> Esser	<i>Balakata baccata</i> (Roxb.) Esser	Tree	April-May	Bark and fruits	LC
84		<i>Bischofia</i> Blume	<i>Bischofia javanica</i> Blume	Tree	April-October	Leaves, bark and roots	LC
85		<i>Bridelia</i> Willd.	<i>Bridelia retusa</i> A.Juss.	Tree	April-January	Bark and leaves	LC
86		<i>Chaetocarpus</i> Thwaites	<i>Chaetocarpus castanocarpus</i> Thwaites	Tree	November-March	Leaves	LC
87		<i>Croton</i> L.	<i>Croton tiglium</i> L.	Tree	January-September	Seeds	LC

88		<i>Croton joufra</i> Roxb.	Tree	Almost throughout Year	Leaves	LC
89	<i>Glochidion</i> J.R.Forst. & G.Forst.	<i>Glochidion zeylanicum</i> var. <i>paucicarpum</i>	Shrub or Tree	June-November	Leaves and fruits	LC
90		<i>Glochidion lanceolarium</i> Voigt	Shrub or Tree	April-February	Bark and leaves	LC
91		<i>Glochidion sphaerogynum</i> Kurz	Tree	December-October	Leaves and bark	VU
92		<i>Glochidion zeylanicum</i> (Gaertn.) A.Juss. var. <i>arborescens</i> (Blume) Chakrab. & M.Gangop.	Tree	April-October	Leaves and bark	LC
93	<i>Hevea</i> Aubl.	<i>Hevea brasiliensis</i> Muell.	Tree	May-September	Latex	LC
94	<i>Macaranga</i> Thouars	<i>Macaranga denticulata</i> (Blume) Mull.Arg.	Tree	April-October	Leaves, stems and bark	LC
95	<i>Mallotus</i> Lour.	<i>Mallotus nudiflorus</i> (L.) Kulju & Welzen	Shrub or Tree	December-May	Bark and roots	LC
96		<i>Mallotus philippensis</i> (Lam.) Mull.Arg.	Shrub or Tree	March-August	Fruits	LC
97	<i>Margaritaria</i> L.f.	<i>Margaritaria indica</i> (Dalziel) Airy Shaw	Tree	April-January	Leaves and stems	LC
98	<i>Phyllanthus</i> L.	<i>Phyllanthus emblica</i> L.	Tree	April-September	Fruits	LC
99	Fabaceae Lindl.	<i>Acrocarpus</i> Wight ex Arn.	Tree	February-May	Not information	NE
100		<i>Albizia</i> Durazz.	Tree	March-December	Bark	LC
101		<i>Albizia odoratissima</i> (L.f.) Benth.	Tree	May-January	Bark and leaves	LC
102		<i>Albizia procera</i> (Roxb.) Benth.	Tree	July-January	Leaves and bark	LC
103	<i>Archidendron</i> F. Muell.	<i>Archidendron clypearia</i> (Jack) I.C.Nielsen	Tree	February-August	Leaves, stems and bark	LC
104	<i>Bauhinia</i> L.	<i>Bauhinia acuminata</i> L.	Tree	April-December	Leaves, bark and roots	LC
105		<i>Bauhinia malabarica</i> Roxb.	Tree	September-March	Leaves and bark	LC
106		<i>Bauhinia purpurea</i> L.	Tree	September-March	Leaves, flowers and bark	LC
107		<i>Bauhinia variegata</i> L.	Tree	December-September	All parts	LC
108	<i>Butea</i> Roxb. ex Willd.	<i>Butea monosperma</i> Kuntze	Tree	March-April	Flowers, bark and seeds	LC
109	<i>Caesalpinia</i> L.	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Tree	Throughout the year	Flowers and bark	LC
110	<i>Cassia</i> L.	<i>Cassia fistula</i> L.	Tree	April-January	Fruits	LC
111		<i>Cassia javanica</i> L. subsp. <i>nodosa</i> (Buch.-Ham. ex Roxb.) K.Larsen & S.S.Larsen	Tree	Rainy season Cold season	Bark, leaves and fruits	LC
112	<i>Dalbergia</i> L.f.	<i>Dalbergia sericea</i> Spreng.	Tree	April-September	Pods	EN
113	<i>Erythrina</i> L.	<i>Erythrina variegata</i> L.	Tree	February-August	Leaves and bark	LC
114	<i>Ormosia</i> Jacks.	<i>Ormosia robusta</i> (Roxb. ex Wight) Voigt	Tree	April-July	Bark and seeds	CR
115	<i>Parkia</i> R.Br.	<i>Parkia timoriana</i> Merr.	Tree	February-April	Pod	LC

116		<i>Pongamia</i> Vent.	<i>Pongamia pinnata</i> (L.) Pierre	Tree	May-October	Seeds, leaves and bark	LC
117		<i>Saraca</i> L.	<i>Saraca asoca</i> (Roxb.) de Wilde	Tree	March-July	Bark	NT
118		<i>Tamarindus</i> L.	<i>Tamarindus indica</i> L.	Tree	May-April	Leaves, bark and roots	LC
119	Fagaceae Dumort.	<i>Castanopsis</i> (D.Don) Spach	<i>Castanopsis hystrix</i> A. DC.	Tree	April-November	Seeds	LC
120		<i>Lithocarpus</i> Blume	<i>Lithocarpus fenestratus</i> Rehder	Tree	August-December	Leaves and bark	LC
121		<i>Quercus</i> L.	<i>Quercus semiserrata</i> Roxb.	Tree	November-March	Leaves and fruits	LC
122	Icacinaeae Miers	<i>Apodytes</i> E.Mey. ex Arn.	<i>Apodytes dimidiata</i> E.Mey. ex Bernh.	Shrub or Tree	All seasons	Bark and leaves	LC
123	Ixonanthaceae Planch. ex Miq.	<i>Ixonanthes</i> Jack	<i>Ixonanthes khasiana</i> Hook. f.	Tree	April-December	Roots	LC
124	Juglandaceae A.Richard ex Kunth	<i>Engelhardtia</i> Lesch. ex Blume	<i>Engelhardtia spicata</i> Lechen. ex Blume	Tree	November-April	Bark and leaves	LC
125	Lamiaceae Martinov	<i>Callicarpa</i> L.	<i>Callicarpa arborea</i> Roxb.	Tree	May-December	Bark, leaves and fruits	LC
126		<i>Premna</i> L.	<i>Premna bengalensis</i> Clarke	Tree	May-November	Leaves and bark	LC
127	Lauraceae Juss.	<i>Actinodaphne</i> Nees	<i>Actinodaphne obovata</i> (Nees) Blume	Tree	April-March	Bark and leaves	LC
128		<i>Alseodaphne</i> Nees	<i>Alseodaphne keenanii</i> Gamble	Tree	July-March	Bark, leaves and roots	NE
129			<i>Alseodaphne oudeni</i> R. Parker	Tree	May	Bark and leaves	VU
130			<i>Alseodaphne petiolaris</i> (Meisn.) Hook.f.	Tree	October-May	Trunk	EN
131		<i>Cinnamomum</i> Schaeffer	<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet	Tree	March-July	Bark and leaves	LC
132			<i>Cinnamomum curvifolium</i> Nees	Tree	March-October	Bark and leaves	LC
133			<i>Cinnamomum glanduliferum</i> (Wall.) Meisn.	Tree	March-September	Leaves, bark and fruits	LC
134			<i>Cinnamomum tamala</i> (Buch.-Ham.) T.Nees & C.H. Eberm.	Tree	April-October	Leaves and bark	LC
135		<i>Litsea</i> Lam.	<i>Litsea cubeba</i> Pers.	Tree	February-August	Fruits, leaves and bark	LC
136			<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Tree	May-October	Bark	LC
137			<i>Litsea monopetala</i>	Tree	May-November	Leaves and bark	LC
138		<i>Neocinnamomum</i> H. Liou.	<i>Neocinnamomum caudatum</i> (Nees) Merr.	Tree	June-February	Leaves and bark	LC
139		<i>Ocotea</i> Aubl.	<i>Ocotea lancifolia</i> Mez	Tree	April-September	Bark and leaves	NE
140	Lecythidaceae Poiteau	<i>Barringtonia</i> J.R.Forst. & G.Forst.	<i>Barringtonia acutangula</i> (L.) Gaertn.	Tree	March-October	Bark	LC
141		<i>Careya</i> Roxb.	<i>Careya arborea</i> Roxb.	Tree	April-July	Bark and leaves	LC
142	Loganiaceae R.Br. ex Mart.	<i>Fagraea</i> Thunb.	<i>Fagraea ceilanica</i> Thunb.	Shrub or Tree	April-Cold Season	Bark and roots	LC
143	Lythraceae J.St. Hil..	<i>Duabanga</i> Buch.-Ham	<i>Duabanga grandiflora</i> Walp	Tree	February-June	Fruits, leaves and bark	LC
144		<i>Lagerstroemia</i> L.	<i>Lagerstroemia parviflora</i> Roxb.	Tree	February-June	Bark and leaves	LC
145			<i>Lagerstroemia</i>	Shrub	Summer	Leaves, bark and	LC

146	Magnoliaceae Juss.	<i>Magnolia</i> L.	<i>speciosa</i> Pers. <i>Magnolia baillonii</i> Pierre	or Tree Tree	season June-July	roots Flowers	LC
147			<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Tree	June-October	Flowers, bark and roots	LC
148			<i>Magnolia doltsopa</i> Buch.-Ham. ex DC.	Tree	January-May	Flowers	DD
149			<i>Magnolia hodgsonii</i> (Hook.f. & Thomson) H. Keng	Tree	April-August	Bark, flowers and leaves	LC
150	Malvaceae Juss.	<i>Abroma</i> Jacq.	<i>Abroma augustum</i> (L.) L.f.	Shrub or Tree	June- November	Bark and leaves	NT
151		<i>Bombax</i> L.	<i>Bombax cieba</i> L.	Tree	January-May	Roots, flowers and bark	LC
152			<i>Bombax insigne</i> Wall.	Tree	November- March	Bark	LC
153		<i>Colona</i> Cav.	<i>Colona floribunda</i> Craib	Tree	June-October	Roots, leaves and flowers	LC
154		<i>Firmiana</i> Marsili	<i>Firmiana colorata</i> (Roxb.) R.Br.	Tree	January-June	Bark, leaves and seeds	LC
155		<i>Grewia</i> L.	<i>Grewia abutilifolia</i> Vent. ex Juss.	Shrub or Tree	Throughout the year	Roots, leaves and bark	LC
156			<i>Grewia eriocarpa</i> Juss.	Shrub or Tree	February- November	Fruits, leaves and bark	LC
157			<i>Grewia serrulata</i> DC.	Shrub or Tree	April-March	Leaves and fruits	NE
158		<i>Heritiera</i> Aiton	<i>Heritiera papilio</i> Bedd.	Tree	January- October	Not information	NE
159		<i>Hibiscus</i> L.	<i>Hibiscus</i> <i>macrophyllus</i> Roxb. Ex Hornem.	Tree	March-July	Leaves, bark and flowers	LC
160		<i>Kydia</i> Roxb.	<i>Kydia calycina</i> Roxb.	Tree	September- March	Leaves and bark	LC
161		<i>Pterospermum</i> Schreb.	<i>Pterospermum</i> <i>acerifolium</i> Willd.	Tree	March-July	Leaves and bark	LC
162			<i>Pterospermum</i> <i>lanceifolium</i> Roxb.	Tree	Spring- Summer	Leaves and bark	LC
163		<i>Sterculia</i> L.	<i>Sterculia versicolor</i> Wall.	Tree	March-June	Bark	LC
164			<i>Sterculia villosa</i> Roxb. ex Sm.	Tree	February- October	All parts	LC
165	Meliaceae Juss.	<i>Aglaiia</i> Lour.	<i>Aglaiia edulis</i> A. Gray.	Tree	November- January	Fruits, bark and leaves	NT
166			<i>Aglaiia perviridis</i> Hiern.	Tree	March- December	Leaves and roots	VU
167			<i>Aglaiia spectabilis</i> (Miq.) S. S. Jain & Bennet	Tree	September- November	Fruits, leaves and bark	LC
168		<i>Aphanamixis</i> Blume	<i>Aphanamixis</i> <i>polystachya</i> (Wall.) R.Parker	Tree	May-April	Bark, leaves and seeds	LC
169		<i>Azadirachta</i> A.Juss.	<i>Azadirachta indica</i> Juss.	Tree	March-July	All parts	LC
170		<i>Chisocheton</i> Blume	<i>Chisocheton</i> <i>paniculatus</i> Hiern.	Tree	June-October	Leaves, stems and seeds	NE
171		<i>Chukrasia</i> A.Juss.	<i>Chukrasia tabularis</i> A. Juss.	Tree	June-October	Bark and leaves	LC
172		<i>Dysoxylum</i> Blume	<i>Dysoxylum excelsum</i> Blume	Tree	September- June	Bark and leaves	LC
173			<i>Dysoxylum</i> <i>gotadhora</i> (Buch.- Ham.) Mabb.	Tree	March- November	Bark and leaves	NE
174			<i>Dysoxylum</i> <i>mollissimum</i> Blume	Tree	January- November	Bark	LC
175		<i>Heynea</i> Roxb.	<i>Heynea trijuga</i> Roxb.	Tree	April- December	Bark, leaves and fruits	LC
176		<i>Melia</i> L.	<i>Melia azedarach</i> L.	Tree	March- December	Leaves, fruits and flowers	LC

177		<i>Toona</i> (Endl.) M.Roem.	<i>Toona ciliata</i> M. Roem.	Tree	January- August	Leaves, bark and flowers	LC
178		<i>Walsura</i> Roxb.	<i>Walsura robusta</i> Roxb.	Tree	February- December	Leaves and bark	DD
179	Menispermaceae Juss.	<i>Cocculus</i> DC.	<i>Cocculus laurifolius</i> DC.	Shrub or Tree	Spring- Autumn	Leaves, bark and roots	LC
180	Moraceae Gaudich.	<i>Artocarpus</i> J.R.Forst. & G.Forst.	<i>Artocarpus</i> <i>heterophyllus</i> Lam.	Tree	March- August	All parts	NE
181			<i>Artocarpus chama</i> Buch.-Ham.	Tree	March-Rainy season	Fruits and leaves	NE
182			<i>Artocarpus integer</i> (Thunb.) Merr.	Tree	February- September	Seeds	LC
183			<i>Artocarpus lacucha</i> Buch.-Ham.	Tree	February- Rainy season	Fruits, leaves and bark	LC
184		<i>Ficus</i> L.	<i>Ficus bengalensis</i> L.	Tree	April- November	Bark, latex and roots	LC
185			<i>Ficus benamina</i> L.	Tree	October- March	Bark, latex and roots	LC
186			<i>Ficus fistulosa</i> Reinw. ex Blume.	Tree	April-July	Latex, roots and leaves	LC
187			<i>Ficus hirta</i> Vahl.	Shrub or Tree	November- Hot season	Roots and fruits	LC
188			<i>Ficus hispida</i> L. f.	Shrub or Tree	June-July	Leaves, bark and fruits	LC
189			<i>Ficus nervosa</i> Roth	Tree	January-Hot season	Latex and leaves	LC
190			<i>Ficus palmata</i> Forssk.	Tree	June- September	Fruits, leaves and latex	LC
191			<i>Ficus prostrata</i> (Miq.) Buch.-Ham. ex Miq.	Tree	January- August	Fruits	LC
192			<i>Ficus racemosa</i> L.	Tree	February- September	Bark, fruits and leaves	LC
193			<i>Ficus religiosa</i> L.	Tree	April- September	Fruits, leaves and bark	LC
194			<i>Ficus rumphii</i> Blume	Tree	May-June	Leaves, fruits and latex	NE
195			<i>Ficus semicordata</i> Buch.-Ham. ex Sm.	Tree	May-October	Fruits, leaves and bark	LC
196			<i>Morus macroura</i> Miq.	Tree	March-May	Fruits and leaves	LC
197		<i>Streblus</i> Lour.	<i>Streblus indicus</i> (Bureau) Corner	Tree	October-Cold season	Bark and leaves	LC
198	Moringaceae Martinov	<i>Moringa</i> Adans.	<i>Moringa oleifera</i> Lam.	Tree	Throughout the year	Leaves	LC
199	Myricaceae Rich. ex Kunth	<i>Myrica</i> L.	<i>Myrica</i> <i>farquhariana</i> Wall.	Tree	February- May	Fruits and bark	NE
200	Myristicaceae R.Br.	<i>Horsfieldia</i> Willd.	<i>Horsfieldia glabra</i> (Blume) Warb.	Tree	March-May	Leaves and bark	LC
201	Myrtaceae Juss.	<i>Eugenia</i> L.	<i>Eugenia roxburghii</i> DC.	Shrub or Tree	March-April	Fruits and leaves	NE
202		<i>Psidium</i> L.	<i>Psidium guajava</i> L.	Tree	April-August	Leaves and fruits	LC
203		<i>Syzygium</i> Gaertn.	<i>Syzygium cumini</i> (L.) Skeels	Tree	February- September	Leaves and fruits	LC
204			<i>Syzygium fruticosum</i> DC.	Tree	May-July	Leaves and fruits	NE
205			<i>Syzygium grande</i> (Wight) Walp.	Tree	March-June	Leaves, bark and fruits	LC
206			<i>Syzygium kurzii</i> (Duthie) N. P. Balakr.	Tree	Summer season	Fruits	NE
207			<i>Syzygium oblatum</i> (Roxb.) Wall. ex Steud.	Tree	April-January	Fruits and leaves	NE
208			<i>Syzygium</i> <i>tetragonum</i> Wall. ex Wight	Tree	July-January	Bark and fruits	LC
209	Oleaceae Hoffmanns. &	<i>Nyctanthes</i> L.	<i>Nyctanthes</i> <i>arbortritis</i> L.	Tree	August-Cold season	Leaves	NE

210	Link Polygalaceae Hoffmanns. & Link.	<i>Polygala</i> L.	<i>Polygala arillata</i> Buch.-Ham. ex D. Don	Shrub May- or Tree November	Roots	LC
211		<i>Xanthophyllum</i> Roxb. <i>Ardisia</i> Sw.	<i>Xanthophyllum</i> <i>flavescens</i> Roxb.	Tree March-July	Bark and leaves	LC
212	Primulaceae Batsch ex Borkh.		<i>Ardisia depressa</i> C.B. Clarke	Shrub January- or Tree December	Leaves and fruits	NE
213			<i>Ardisia paniculata</i> Roxb.	Shrub Throughout or Tree the year	Leaves and roots	NE
214	Proteaceae Juss.	<i>Helicia</i> Lour.	<i>Helicia robusta</i> (Roxb.) R.Br. ex Blume	Tree September- February	Bark and leaves	LC
215	Rhamnaceae Juss.	<i>Hovenia</i> Thunb.	<i>Hovenia dulcis</i> Thunb.	Shrub May-October or Tree	Seeds	LC
216		<i>Sageretia</i> Brongn.	<i>Sageretia filiformis</i> G. Don	Shrub June-August or Tree	Leaves	NE
217		<i>Ziziphus</i> Mill.	<i>Ziziphus jujuba</i> Mill.	Tree May-October	Fruits and seeds	LC
218			<i>Ziziphus rugosa</i> Lamk.	Tree November- January	Fruits and bark	LC
219	Rhizophoraceae Pers.	<i>Carallia</i> Roxb.	<i>Carallia brachiata</i> Merr.	Tree Winner- Summer	Bark and leaves	LC
220	Rosaceae Juss.	<i>Prunus</i> L.	<i>Prunus ceylanica</i> Miq.	Tree July-February	Bark and leaves	EN
221	Rubiaceae Juss.	<i>Aidia</i> Lour.	<i>Aidia densiflora</i> (Benth.) Masam.	Tree February- August	Leaves and roots	LC
222		<i>Canthium</i> Lam.	<i>Canthium glabrum</i> Blume	Tree July-March	Leaves	NT
223		<i>Catunaregam</i> Wolf	<i>Catunaregam</i> <i>spinosa</i> (Thunb.) Tirveng.	Tree April- December	Bark and leaves	LC
224		<i>Chassalia</i> Comm. ex Poir.	<i>Chassalia curvijflora</i> (Wall.) Thwaites var. <i>longifolia</i> Hook.f.	Shrub May-July or Tree	Leaves and roots	LC
225		<i>Discospermum</i> Dalzell	<i>Discospermum</i> <i>abnorme</i> (Korth.) S. J. Ali & Robbr.	Tree April-Cold Season	Leaves	LC
226		<i>Hymenodictyon</i> Wall.	<i>Hymenodictyon</i> <i>orixense</i> (Roxb.) Mabb.	Tree May- December	Bark and leaves	LC
227		<i>Ixora</i> L.	<i>Ixora malabarica</i> (Dennst.) Mabb.	Tree June	Roots, flowers and leaves	VU
228		<i>Metadina</i> Bakh.f.	<i>Metadina</i> <i>trichotoma</i> (Zoll. & Moritzi) Bakh.f.	Tree April- December	Bark	NE
229		<i>Meyna</i> Roxb. ex Link	<i>Meyna spinosa</i> Roxb. ex Link	Shrub April-October or Tree	Fruits and leaves	NE
230		<i>Morinda</i> L.	<i>Morinda</i> <i>angustifolia</i> Roxb.	Shrub April-October or Tree	Roots and leaves	LC
231		<i>Nauclea</i> L.	<i>Nauclea orientalis</i> L.	Tree July-January	Leaves and bark	LC
232		<i>Neolamarckia</i> Bosser	<i>Neolamarckia</i> <i>cadamba</i> (Roxb.) Bosser	Tree June-January	Bark, leaves and fruits	NE
233		<i>Neonauclea</i> Merr.	<i>Neonauclea</i> <i>sessilifolia</i> Merr.	Tree July-October	Leaves and stem	NE
234		<i>Pavetta</i> L.	<i>Pavetta indica</i> L.	Shrub Not seen or Tree	Roots and leaves	LC
235		<i>Prismatomeris</i> Thwaites	<i>Prismatomeris</i> <i>tetrandra</i> K. Schum.	Shrub May- or Tree December	Roots and leaves	LC
236		<i>Tarennoidea</i> Tirveng. & Sastre	<i>Tarennoidea</i> <i>wallichii</i> (Hook.f.) Tirveng. & Sastre	Tree March-July	Not information	NE
237		<i>Wendlandia</i> Willd.	<i>Wendlandia</i> <i>budleioides</i> Wall. ex Wight & Arn.	Tree August- December	Leaves	NE
238	Rutaceae Juss.	<i>Acronychia</i> J.R.Forst. & G.Forst.	<i>Acronychia</i> <i>pedunculata</i> Miq.	Shrub April-August or Tree	Leaves, bark and roots	LC
239		<i>Aegle</i> Corrêa ex Koenig	<i>Aegle marmelos</i> (L.)	Tree April-August	Fruits, leaves and	NT

240		<i>Atalantia</i> Corrêa	Correa <i>Atalantia monophylla</i> (L.) DC.	Tree	December-March	bark Leaves, fruits and roots	LC
241			<i>Atalantia simplicifolia</i> (Roxb.) Engl.	Shrub or Tree	November	Leaves and fruits	LC
242		<i>Citrus</i> L.	<i>Citrus maxima</i> (Burm.) Merr.	Tree	April-December	Fruits	LC
243			<i>Citrus medica</i> L.	Shrub or Tree	April-November	Fruits	LC
244		<i>Clausena</i> Burm.f.	<i>Clausena heptaphylla</i> (Roxb. ex DC.) Wight & Arn. ex Steud.	Shrub or Tree	April-July	Leaves and fruits	LC
245		<i>Glycomis</i> Corrêa	<i>Glycomis pentaphylla</i> (Retz.) DC.	Tree	April-March	Leaves	NE
246		<i>Micromelum</i> Blume	<i>Micromelum integerrimum</i> (Roxb. ex DC.) Wight & Arn. ex M.Roem.	Tree	February-September	Leaves, bark and roots	LC
247		<i>Murraya</i> J.Koenig	<i>Murraya koenigii</i> (L.) Spreng.	Tree	March-June	Leaves	LC
248			<i>Murraya paniculata</i> (L.) Jack.	Shrub or Tree	April-February	Leaves	NE
249		<i>Tetradium</i> Lour.	<i>Tetradium rutilicarpum</i> (A.Juss.) T.G.Hartley	Shrub or Tree	April-November	Fruits	LC
250		<i>Zanthoxylum</i> L.	<i>Zanthoxylum armatum</i> DC.	Tree	April-October	Fruits, seeds and bark	LC
251	Sabiaceae Blume	<i>Meliosma</i> Blume	<i>Meliosma arnottiana</i> (Wight) Walp.	Tree	May-October	Stems and bark	LC
252			<i>Meliosma pinnata</i> (Roxb.) Maxim.	Tree	May-October	Not information	NE
253			<i>Meliosma simplicifolia</i> (Roxb.) Walp.	Tree	April-June	Bark and leaves	NE
254		<i>Casearia</i> Jacq.	<i>Casearia graveolens</i> Dalzell	Tree	March-November	Roots, bark and leaves	NE
255			<i>Casearia kurzii</i> Clarke	Tree	July-March	Leaves	LC
256		<i>Flacourtia</i> Comm. ex L'Hér.	<i>Flacourtia indica</i> (Burm.f.) Merr.	Shrub or Tree	January-July	Leaves, fruits and roots	LC
257			<i>Flacourtia jangomas</i> (Lour.) Raeusch.	Shrub or Tree	April-October	Fruits, leaves and bark	NE
258		<i>Gynocardia</i> Roxb.	<i>Gynocardia odorata</i> Roxb.	Tree	January-August	Seeds	NE
259		<i>Hydnocarpus</i> Gaertn.	<i>Hydnocarpus kurzii</i> Warb.	Tree	May-December	Bark, fruits and leaves	DD
260	Sapindaceae Juss.	<i>Acer</i> L.	<i>Acer laurinum</i> Hassk.	Tree	June-December	Leaves and fruits	LC
261		<i>Aesculus</i> L.	<i>Aesculus assamica</i> Griff.	Tree	January-November	Seeds and bark	LC
262		<i>Harpullia</i> Roxb.	<i>Harpullia cupanioides</i> Roxb.	Tree	Spring-Late autumn	Bark	LC
263		<i>Lepisanthes</i> Blume	<i>Lepisanthes senegalensis</i> (Poir.) Leenh.	Shrub or Tree	March-May	Leaves, fruits and roots	LC
264		<i>Sapindus</i> L.	<i>Sapindus mukorossi</i> Gaertn.	Tree	May-November	Fruits, leaves and bark	LC
265			<i>Sapindus rarak</i> DC.	Tree	Summer-Autumn	Fruit	LC
266	Sapotaceae Juss.	<i>Chrysophyllum</i> L.	<i>Chrysophyllum roxburghii</i> G.Don	Tree	April-November	Fruits	LC
267		<i>Mimusops</i> L.	<i>Mimusops elengi</i> L.	Tree	March-December	Bark, flowers and leaves	LC
268		<i>Palaquium</i> Blanco	<i>Palaquium polyanthum</i> Engl.	Tree	May	Latex	EN

269		<i>Planchonella</i> Tiegh.	<i>Planchonella grandifolia</i> Pierre	Tree	Throughout the year	Fruits and latex	NE
270	Scrophulariaceae Juss.	<i>Buddleja</i> L.	<i>Buddleja asiatica</i> Loureiro	Tree	January-December	Leaves and fruits	LC
271	Simaroubaceae DC.	<i>Ailanthus</i> Desf.	<i>Ailanthus integrifolia</i> Lam. subsp. <i>calycina</i> (Pierre) Nooteb.	Tree	January-April	Bark and leaves	LC
272	Solanaceae Juss.	<i>Solanum</i> L.	<i>Solanum torvum</i> Sw.	Shrub or Tree	Through out the year	Leaves, fruits and roots	NE
273	Styracaceae DC. & Spreng.	<i>Styrax</i> L.	<i>Styrax serrulatus</i> Roxb	Tree	March-November	Resin, roots and leaves	LC
274	Symplocaceae Desf.	<i>Symplocos</i> Jacq.	<i>Symplocos cochinchinensis</i> S. Moore	Shrub or Tree	November-June	Bark and leaves	LC
275	Theaceae Mirb. ex Ker	<i>Camellia</i> L.	<i>Camellia oleifera</i> C.Abel	Shrub or Tree	December-October	Seeds	LC
276	Gawl.	<i>Eurya</i> Thunb.	<i>Eurya acuminata</i> Candolle	Shrub or Tree	November-June	Leaves	LC
278			<i>Eurya nitida</i> Korth.	Shrub or Tree	January-November	Leaves and bark	LC
279		<i>Schima</i> Reinw. ex Blume	<i>Schima wallichii</i> (DC.) Korth.	Tree	April-December	Bark and leaves	LC
280	Thymelaeaceae Juss.	<i>Aquilaria</i> Lam.	<i>Aquilaria malaccensis</i> Lam.	Tree	April-September	Leavestwig	CR
281	Ulmaceae Mirbel	<i>Aphananthe</i> Planch.	<i>Aphananthe cuspidata</i> (Blume) Planch.	Tree	March-December	Leaves, fruits and seeds	NE
282		<i>Trema</i> Lour.	<i>Trema orientalis</i> Blume	Tree	April-December	Leaves and bark	LC
283	Urticaceae Juss.	<i>Dendrocnide</i> Miq.	<i>Dendrocnide sinuata</i> (Blume) Chew	Shrub or Tree	September-April	Roots and leaves	LC
284		<i>Oreocnide</i> Miq.	<i>Oreocnide integrifolia</i> (Gaudich.) Miq.	Shrub or Tree	March-September	Leaves	NE
285	Verbenaceae J.St.-Hil.	<i>Gmelina</i> L.	<i>Gmelina arborea</i> Roxb.	Tree	March-June	Roots and fruits	LC
286		<i>Tectona</i> L.f.	<i>Tectona grandis</i> L.f.	Tree	August-January	Stems	LC
287	Vitaceae Juss.	<i>Cissus</i> L.	<i>Cissus quadrangularis</i> L.	Tree	June-December	Stems	NE
289		<i>Leea</i> D.Royen	<i>Leea indica</i> (Burm.f.) Merr.	Shrub or Tree	June-December	Leaves and roots	LC
290		<i>Vitex</i> L.	<i>Vitex pinnata</i> L.	Tree	October-March	Bark and leaves	LC

LC- Least Concern; NE- Not Evaluated; DD- Data Deficient; NT- Not Threatened; VU- Vulnerable; EN- Endangered and CR= CR – Critically Endangered), Con. Status= Conservation status

Thus, the integrating traditional ethnobotanical knowledge with scientific conservation strategies is essential for the sustainable management of threatened plant resources.

Indigenous and local communities of regions such as the Barak valley possess rich, knowledge about the identification, phenology, uses, and harvesting methods of various tree species. This knowledge has evolved through close interaction with nature and often reflects practices that ensure long-term availability of plant resources. However, increasing population pressure, habitat destruction, and

unregulated extraction have led to the rapid decline of many ethnobotanically important tree species (Laskar *et al.*, 2022).

Scientific conservation approaches such as ecological assessment, population monitoring, ex situ and in situ conservation, and IUCN-based threat evaluation provide systematic tools to assess the status and regeneration potential of these species. When combined with traditional knowledge, these strategies become more effective and culturally acceptable. Community participation, guided by indigenous practices, can enhance conservation outcomes by

promoting sustainable harvesting, domestication of medicinal trees, and protection of sacred groves. Thus, the integration of ethnobotanical wisdom with modern scientific methods not only strengthens biodiversity conservation but also safeguards cultural heritage and livelihoods of local communities. Such a holistic approach ensures balanced utilization and long-term conservation of threatened tree species, contributing to ecological stability and sustainable development (Arunachalam and Deb, 2023).

The presence of threatened taxa underscores the urgent need for conservation interventions. Unsustainable extraction for timber and medicinal use, combined with habitat loss, poses serious risks to these species. Community awareness, promotion of sustainable harvesting practices, and protection of natural habitats are essential for long-term conservation. Integrating ethnobotanical knowledge with *in-situ* and *ex-situ* conservation strategies can help balance utilization and preservation.

CONCLUSION

The Barak valley of Assam exhibits remarkable tree diversity coupled with rich ethnobotanical knowledge. While most tree species are currently classified as Least Concern, the presence of Vulnerable, Endangered, and Critically Endangered species highlights growing conservation challenges. Traditional uses, though valuable, can accelerate resource depletion if unmanaged. Therefore, sustainable utilization, scientific monitoring, and community participation are essential for conserving arboreal biodiversity. This review provides a foundational dataset that can support future research, conservation planning, and policy development aimed at safeguarding tree resources in the Barak valley.

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