International Journal on Science and Technology (IJSAT)
E-ISSN: 2229-7677 ● Website: www.ijsat.org ● Email: editor@ijsat.org

# Native Tree Species of the South Gujarat Region in Landscaping for Enhancing Biodiversity Value and Utility

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**Abstract:**

Native landscaping is gaining recognition as a sustainable and ecologically sound practice that minimises the environmental impact of traditional ornamental landscaping by integrating local plant species. This study focuses on the identification and documentation of native tree species in the South Gujarat region, emphasising their role in sustainable landscaping and biodiversity conservation. The survey was conducted across rural and forested areas of the Dangs, Jambughoda, Vansda National Park, Shoolpaneshwar Wildlife Sanctuary, and a few bordering villages like Waghai, Chikhli, and Unai. Tree species were identified using the Gujarat State Flora, and ethnobotanical information was collected through community interaction and personal observations. A total of 50 native tree species were documented, with detailed information on their botanical and local names, habitat types, and ecological & utilitarian values. Many species showed significant medicinal, cultural, and ecological importance. The study highlights the potential of these native species to be incorporated into modern landscape planning to enhance biodiversity, reduce dependency on exotic flora, and maintain ecological balance. Ultimately, it contributes to the broader goals of conservation and environmental sustainability by advocating for the integration of native flora in urban and rural landscaping efforts.

**Keywords:**
Native trees, South Gujarat, landscaping, native landscaping, biodiversity, sustainable development, ethnobotany, ecological landscaping, native species conservation

## 1. Introduction:

Landscaping is the science of reshaping the outdoor areas into attractive and practical spaces. It is a complex blend of art and science (Burud, A. *et al*., 2023). Landscaping extends beyond the simple decorations and artwork. It aims to design outdoor environments that are harmonious, sustainable, and meaningful, ultimately improving the overall quality of life. Landscaping is an evolving field that demands a thorough knowledge of ecological systems, a keen artistic sense, and attention to practical factors (Burud, A. *et al*., 2023). Landscaping should be sustainable. At this point, to reduce the exploitation of exotic species, native landscaping plays a key role. It is a type of landscaping in which native plant species that are locally found in the area are utilised. Native landscaping has emerged as a holistic, environmentally superior alternative to traditional landscaping, as it integrates the functions of local ecosystems and significantly reduces capital expenditure (Kermath, B., 2007).

This study has been carried out for understanding and getting a deeper knowledge of the native tree species of South Gujarat.

## 2. Materials and Methodology:

The survey work took place in various localities of rural as well as forest areas in South Gujarat. The study was carried out through the areas of the Dangs, Jambughoda, Vansda National Park, Shoolpaneshwar Wildlife Sanctuary, and a few bordering villages like Waghai, Chikhli, and Unai. The collected plant species were identified by the Gujarat State flora (Shah, 1978). Local or vernacular names, basic usages and importance were reported by surveying the local communities. A model questionnaire was prepared to collect data from the locals of the respective areas. Several individual interviews with the local tribal community of *Kochariyo Badavo* were conducted along with personal observations to gather information. After an extensive survey and collection tours, many native tree species were identified and collected. The data thus collected was cross-referenced with relevant research and authenticated publications on the biodiversity of South Gujarat and native tree species of Gujarat and India.

A list was prepared in alphabetical order, consisting of the information like the botanical and local names of the species, family, habitat, and biodiversity value for efficient use in modern landscaping.

## 3. Results and Discussion:

From the above survey, 25 tree species were recorded, which are found to have major biodiversity significance along with medicinal and ethnobotanical values.

Table 1: Habitat and Biodiversity Value of Various Native Tree Species of South Gujarat

| Sr No | Botanical Name | Local Name | Family | Habitat Type | Biodiversity Value |
|---|---|---|---|---|---|
| 1 | *Aegle marmelos* | Bel / Bilipatra | Rutaceae | Rocky, dry forests | Sacred tree; fruit eaten by monkeys; butterfly host |
| 2 | *Albizia lebbeck* | Shirish | Fabaceae | Open forest, avenue | Nitrogen fixer; bee-friendly flowers; fodder use |
| 3 | *Alstonia scholaris* | Saptaparni | Apocynaceae | Moist forest patches | Nectar for moths; nesting habitat for birds |
| 4 | *Azadirachta indica* | Limbdo/ Neem | Meliaceae | Arid and semi-arid zones | Antimicrobial; insect repellent; birds nest in its canopy |
| 5 | *Bauhinia racemosa* | Asundro / Apta | Fabaceae | Scrub, dry forest | Nitrogen fixer; attracts bees and butterflies |
| 6 | *Bauhinia variegata* | Kachnar | Fabaceae | Dry forests, gardens | Ornamental, edible buds, butterfly attractor |

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|---|---|---|---|---|---|
| 7 | *Cassia fistula* | Garmalo | Fabaceae | Forest edges, gardens | Ornamental; bee-friendly; host for butterflies |
| 8 | *Cordia dichotoma* | Gunda | Boraginaceae | Dry to moist forest zones | Edible fruit; nectar source; fodder value |
| 9 | *Dalbergia sissoo* | Shisham | Fabaceae | Moist deciduous forest | High timber value; butterfly host; nitrogen fixer |
| 10 | *Diospyros melanoxylon* | Tendu / Kendu | Ebenaceae | Dry deciduous forest | Fruit for birds; leaves used by tribal communities |
| 11 | *Ficus benghalensis* | Vad / Banyan | Moraceae | Plains, temple groves | Supports epiphytes, birds, bats; microhabitat creator |
| 12 | *Ficus racemosa* | Umro | Moraceae | Moist deciduous, riparian | Host to fig wasps; fruit for mammals and birds |
| 13 | *Ficus religiosa* | Peepal | Moraceae | Riverbanks, sacred groves | Keystone species; food for birds, bats, insects |
| 14 | *Gmelina arborea* | Shewan / Gamhar | Lamiaceae | Forest edges, plantations | Bee-attracting flowers; fast-growing |
| 15 | *Holoptelea integrifolia* | Kanji | Ulmaceae | Open forests, farm edges | Shade tree; host for butterfly larvae |
| 16 | *Madhuca longifolia* | Mahuda / Mahua | Sapotaceae | Dry deciduous forest | Nectar for bats; flowers and fruits for wildlife |
| 17 | *Mallotus philippensis* | Sinduri | Euphorbiaceae | Hill forests, forest margins | Medicinal dye; supports butterfly larvae |
| 18 | *Mangifera indica* | Aam / Keri | Anacardiaceae | Plains and foothills | Fruits for wildlife and humans; pollinator host |
| 19 | *Mitragyna parvifolia* | Wild Kadamb | Rubiaceae | Riparian and valley areas | Host plant for birds; fruit attracts wildlife |
| 20 | *Pterocarpus marsupium* | Biyo / Indian Kino Tree | Fabaceae | Dry deciduous forest | Timber tree; resin supports soil microbes |
| 21 | *Putranjiva roxburghii* | Putrajiva | Putranjivaceae | Moist zones, sacred groves | Shade tree; fruit for birds; culturally symbolic |

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| 22 | *Syzygium cumini* | Jamun/ Jambu | Myrtaceae | Moist lowland forests | Fruit for birds, bats; shade tree; soil binder |
| 23 | *Tamarindus indica* | Ambli / Imli | Fabaceae | Dry and moist deciduous | Fruit for birds and mammals; drought-tolerant |
| 24 | *Terminalia arjuna* | Arjun | Combretaceae | Riparian, river banks | Stabilises stream banks; nectar and host for butterflies |
| 25 | *Terminalia bellirica* | Baheda | Combretaceae | Mixed deciduous forest | Fruit source for birds and mammals; Ayurvedic use |
| | *Ziziphus mauritiana* | Bor | Rhamnaceae | Dry deciduous and arid | Fruits for birds and mammals; drought-hardy |

## 4. Conclusion:

Through this study, we aim to check the exploitation of exotic species can be checked. This study shall also become an instrument in finding out the native species to utilise appropriately while planning a landscape which promotes sustainability as well as acknowledges the importance of these native plants.

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