

AN OVERVIEW OF TRADITIONAL WOODEN HANDICRAFT SPECIES FROM SOUTH INDIA

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Abstract

India is home to a large variety of tree species, including 1,600 that are valuable as commercial timber, but only a small number of these species are traditionally used in handicrafts industry because the choice of trees for handicrafts depends on a number of factors with the availability of the species playing a key role. *Wrightia tinctoria* R.Br., *Manilkara hexandra* Dubard, *Givotia mollucana* (L.) Sreem. (syn: *G. rottleriformis* Griffith), *Samanea saman* Merr., *Mangifera indica* L., *Dalbergia latifolia* Roxb. and *Cocos nucifera* L. are the main traditional tree species used in South India in handicraft industry. We are emphasising a deeper understanding of the silviculture and wood properties elements of traditional species utilised in the handicraft industry in this article as well as highlighting the issues and potential solutions with regard to traditional handicraft species.

Introduction

Wooden carved handicrafts have a unique place in India's art and cultural history (**Fig. 1**). The beauty and aesthetic value of wooden handicrafts render them more popular and well known in the world. Among the diverse groups of trees, based on the nature of growth, weight, colour, suitability of the texture and grains of the wood certain timbers are selected for raw material in the handicraft sector (**Table 1**).

South India, with its rich natural resources and cultural heritage has been a hub of wooden handicrafts for centuries. The traditional wooden handicraft industry in South India is not only a source of livelihood for the local artisans but also plays a significant role in preserving the region's cultural and artistic heritage.

In this review article, we provide an overview of the traditional wooden handicraft species from South India, which mainly

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Table 1: Major species used in wooden handicrafts manufacturing clusters in South India

State/UT	Cluster Name	Purpose	Traditional Species
Andhra Pradesh	Etikoppaka	Making wooden toys	<i>Wrightia tinctoria</i> R.Br., <i>Manilkara hexandra</i> Dubard
	Kondapalli	Making wooden toys	<i>Givotia mollucana</i> (L.) Sreem. (syn: <i>G. rottleriformis</i> Griffith)
Telangana	Nirmal	Making wooden toys	<i>Givotia mollucana</i> (L.) Sreem. (syn: <i>G. rottleriformis</i> Griffith)
Karnataka	Channapattana	Making wooden toys	<i>Wrightia tinctoria</i> R. Br.
	Kinnal	Making wooden toys	<i>Givotia mollucana</i> (L.) Sreem. (syn: <i>G. rottleriformis</i> Griffith)
Tamilnadu	Thammampatti	Wooden statues	<i>Samanea saman</i> Merr. <i>Mangifera indica</i> L.
Kerala	Quilandy	Coconut Wood/ Coconut Shell Gift Articles	<i>Cocus nucifera</i> L.
	Trivandrum	Carvings Gift Wares, Wooden statues	<i>Dalbergia latifolia</i> Roxb.

(Rao et al., 2001; Aggarwal et al., 2013; Babu et al., 2021).

includes their silvicultural characteristics (Troup, 1975) and wood properties (Sujatha et al., 2021).

Only forests and plantations have historically been used as sources of wood. Yet, the increased demand for raw materials has increased the attention being paid to TOFs (Trees Outside Forests), such as agroforestry and social forestry projects, as

sources. It is crucial to guarantee the quality of the raw materials used in the production of wooden crafts, thus, it is imperative to improve our knowledge of trees' silvicultural considerations.

1. *Wrightia tinctoria* R. Br.

Silvicultural characteristics: It is small to a medium-sized deciduous tree with slow to moderate growth.



Fig. 1. Wooden statues made from tree species like *Dalbergia latifolia*, *Samanea saman*, etc. from the Thammampatti wooden handicraft cluster in Tamil Nadu

Wood properties: When young, wood is white; as it ages, it turns yellowish-grey or yellowish-brown, with the heartwood becoming undetectable. It is soft, light to moderately hard, and moderately heavy (sp. gr. 0.48–0.69 air dry); the grain is typically straight, very rarely shallowly interlocked or wavy; and the texture is very fine.

2. *Manilkara hexandra* Dubard

Silvicultural characteristics: In the Indian Peninsula, it is one of the principal trees in the dry evergreen forests of the Carnatic region and surrounding countries. It is an important tree fruit crop growing under semi-arid conditions on gullied and ravenous lands. The appearance of the tree is marked by its large crown, which it spreads out

above its companions. On lateritic and sandstone soils, it can grow, but it is generally a light-demanding, evergreen and slow-growing species.

Wood properties: The density of the wood, which varies depending on the degree of drying and is often said to range from roughly 0.83 to 1.08 tonne per cubic metre is hard, long-lasting and heavy.

3. *Givotia mollucana* (L.) Sreem. (syn: *G. rottleriformis* Griffith)

Silvicultural characteristics: This deciduous tree has a medium height and rapid growth. commonly encountered at the edges of dry deciduous hills in peninsular India that are 400 to 900 metres high, notably in a small portion of the forests in

the states of Karnataka, Tamil Nadu, West Bengal and Andhra Pradesh.

Wood properties: The wood has a fine to medium texture, with a uniform and straight grain. The heartwood is yellowish-brown, sometimes with a purplish tinge. The sapwood is lighter in color, usually pale yellow or white. The wood of *Givotia mollucana* is moderately durable and resistant to decay, but not very resistant to insect attack. Also, the wood has moderate strength properties with good bending and crushing strength, but relatively low stiffness and resistance to shock.

4. *Samanea saman* Merr.

Silvicultural characteristics: It is a true tropical tree species that grows best on fertile, neutral to moderately acidic (pH > 4.6) alluvial soils with good drainage, although it may also withstand heavy clay soils (vertisols) and infertile or seasonally wet soils. It may grow up to 1500 m above sea level.

Wood properties: Sapwood is light yellow, making it very easy to differentiate from heartwood, which ranges in colour from golden brown to dark brown. Wood is very stable, long-lasting, and resistant to insect and pest damage. It also does not warp.

5. *Mangifera indica* L.

Silvicultural characteristics: A shade-bearer tree that is vulnerable to both severe droughts and frosts yet can withstand occasional frosts.

Wood properties: Light to golden brown is the colour of mango wood. Although it is a type of hardwood, its softness makes it perfect for use in handicrafts. Its texture ranges from medium to coarse with a fine, thick grain.

6. *Dalbergia latifolia* Roxb.

Silvicultural characteristics: A moderate light consumer, it benefits from overhead lighting and stands in some shadow during its early growth. If planted in an environment with too much open space, it is prone to becoming crooked and branchy. Drought damages seedlings, but the tree is unquestionably drought-resistant. Cattle and goats will quickly browse the seedlings and saplings, but in regions with a lot of weeds, gentle grazing may help the seedlings thrive. Although the tree thrives in deep, wet, well-drained soil, it may also grow well in poor, dry soils; nonetheless, it cannot withstand inadequate drainage.

Wood properties: Light golden brown, light purple with dark streaks and deep purple with thin black lines are some of the colour variations of heartwood. Heartwood weighs roughly 850 kilogrammes per cubic metre and darkens with age. There are no obvious annual rings in the high hardwood.

7. *Cocos nucifera* L.

Silvicultural characteristics: *Cocos nucifera* is a tropical palm species that thrive in hot, humid environments. It is typically

grown in coastal areas with well-drained, sandy soils. It typically takes around 5-6 years for the palm to reach maturity and begin producing fruit. It reproduces through seed propagation. The seeds are typically planted in well-drained soil and take around 3-4 months to germinate. The management of *Cocos nucifera* typically involves regular fertilization, irrigation and pest control. Pruning is also essential to maintain the health and productivity of the palm.

Wood properties: The wood has a fine, even texture, which makes it easy to work with. The wood is highly durable and resistant to decay, fungi, and termites due to the presence of natural oils and resins. The wood of *Cocos nucifera* is not particularly strong, but it is resilient and flexible, making it suitable for applications where flexibility is required. The wood has a light brown colour, with a subtle grain pattern that adds to its aesthetic appeal.

Issues regarding traditional species

The majority of the South Indian wooden handicraft clusters, such as Channapattana, Mysore, Kinhal (Kinnal), Sagar, Nirmal, Kondapalli, Thammampatti, Chinna Salem, Kallakurichi and Thiruvananthapuram, have a serious shortage of raw materials. India is home to a wide variety of tree species, including 1,600 that are valuable as commercial timber. Although ultimately the choice of wood depends on availability, the preferred wood by artists is soft to moderately hard, has a fine texture and is simple to carve into desired shapes.

The primary species historically utilized in the south Indian wooden handicraft industries are *Wrightia tinctoria* R. Br. *Manilkara hexandra* Dubard, *Givotia mollucana* Sreem. *Samanea saman* Merr., *Mangifera indica* L. *Dalbergia latifolia* Roxb., and *Cocus nucifera* L. (Babu et al., 2021). It has been difficult for the wooden handicrafts sector to maintain a steady supply of raw materials due to the historical over exploitation of locally available traditional species and restrictions on cutting down forest trees. It has been reported that the lack of region-specific species like *Givotia mollucana* Sreem. in Nirmal and Kondapalli, *Wrightia tinctoria* R. Br. in Channapattana and Kinal in Karnataka and Ettikoppaka in the state of Andhra Pradesh has a negative impact on the livelihood of numerous marginalized traditional artisans and industries in those areas (Rao et al., 2001, 2011).

Possible solutions to tackling the raw material scarcity

In order to improve the wooden handicraft industry, it is essential to preserve the forests that provide the appropriate species of traditional raw materials to the industry. To do this, the forests must be managed sustainably through practices like advancing seed and propagation research, suggesting the establishment of traditional tree species plantations under working plans, and replenishing traditional tree species in their native habitats through appropriate plantations. The many stake-

holder groups may benefit from the development of a set of procedures, including plantation methods for each of the handicraft species (Shukla and Rao, 2021).

Because the traditional workers will struggle to survive on conventional wood in the absence of alternate supplies of wood, plantation timber needs to be introduced into the handicraft industry (Syovik and Garima, 2021). It is necessary to evaluate the possibilities of the various plantation timbers that are accessible for use in producing different types of handicrafts (Karthik et al., 2021). *Simarouba glauca* DC. *Maesopsis eminii* Engl., *Swietenia mahagoni* (L.) Jacq. and *Chloroxylon swietenia* DC. are a few promising alternative species that have been developed and appreciated by wood artisans for their better working quality and processing parameters (Shukla and Rao, 2021). However, these species have not yet been thoroughly studied for mass propagation, silvicultural techniques, improvements in wood quality parameters, and processing technologies.

Planting the traditional and alternate species in agroforestry systems is a good idea and it will reduce the pressure on natural forests (Sarath and Krishnanunni, 2022) but proper and flexible felling, transit policies and certification process are also needed apart from that, relaxing the regulations for getting credit from financial institutions is one of the major strategies

to solve the raw materials procurement problems and financial security to the artisans.

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