

# Technical expertise on wood

## Characterization and use of timber species

### CHALLENGES AND ACTORS

With the steady increase in global demand for timber, how can forestry in tropical countries be adjusted to market requirements for housing and furniture in a responsible and sustainable manner? Meeting this challenge requires in-depth knowledge of the characteristics of this material and of the timber sector.

CIRAD, through its BioWooEB (Biomass, Wood, Energy, Bioproducts) Research Unit, is an expert in tropical and Mediterranean timber. In France and in the producing countries, it provides support for the timber sector: forest operators and planners, primary and secondary processing companies (small-scale units, SMEs, industries), project managers, contractors, architects, monitoring offices, consultancy firms, etc.

### EXPERTISE PROPOSED

#### CIRAD's commitment to the tropical timber sector

Improving and developing the processing and use of tropical timber as part of the sustainable management of forest resources, acting simultaneously on:

- ▶ Wood raw material
- ▶ Techniques of processing and use
- ▶ Marketing of timber and timber products

#### Expertise to support professionals in the sector

Anatomical identification of tropical and temperate timber

- ▶ Microscopic analysis of anatomical wood structure

Characterization of the technological behavior of timber species (natural forests, plantations, or agroforestry stands) in order to determine their potential applications

- ▶ Physical and mechanical studies and trials (processing, applications)
- ▶ Biological studies and trials on durability and protection

Technical assistance for tropical timber applications, in France or abroad

- ▶ Recommendation of suitable species
- ▶ Recommendation of construction systems suited to species performance
- ▶ Control and monitoring of the quality of timber and supplies

Advice on the organisation of timber supply and the competitiveness of tropical forest products

- ▶ Analyzing supply and demand for timber
- ▶ Improving competitiveness
- ▶ Assessing production

### CIRAD IN A NUTSHELL

- CIRAD is the French agricultural research and international cooperation organisation working for the sustainable development of tropical and Mediterranean regions.
- In partnership with the countries of the South, it produces and disseminates new knowledge to support agricultural development and to contribute to the debate on the major global challenges of agriculture, food and rural territories.
- ▶ Operations in 100 countries in the global South
- ▶ A staff of 1 650 people
- ▶ 800 researchers & engineers.



Glued laminated framework, Jean-Marie Tjibaou cultural center - Nouméa (New Caledonia)

TEAM AND RESOURCES

The tropical wood experts in the BioWooEB Research Unit conduct studies on:

- ▶ Wood anatomy, physics and mechanics
- ▶ Natural durability, preservation and protection of wood and wooden products
- ▶ Xylometry and non-destructive control
- ▶ Marketing of timber, economics and analysis of sectors
- ▶ Processing techniques (sawing, drying and conditioning, secondary processing, finishing)

In Montpellier, BioWooEB is equipped with a research and services platform including a xylotheque (more than 8 000 species), five laboratories, a processing centre (dryers, secondary processing workshop, gluing station) and a database containing the technological characteristics of 1 400 tropical and temperate species. Our wood preservation laboratory has COFRAC accreditation (number 1-1686, available at [www.cofrac.fr](http://www.cofrac.fr)).



CIRAD's xylotheque

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PRODUCTS & SERVICES OFFER

- ▶ Studies, technological tests and expertise (identification, characterization, durability, preservation)
- ▶ Technical assistance and support for wood use projects (choice, prescription, specifications, control, etc.)
- ▶ Customized training courses
- ▶ Advice on organizing supply and competitiveness



Denis Delequeuche - Bois et Loisirs

Okan - "Drôle de Carré" - Mallet-Stevens gardens, by Bois et Loisirs - Croix (France)

TOOLS MARKETED

Tropix®: database software for the technological characteristics of tropical and temperate forest species — [tropix@cirad.fr](mailto:tropix@cirad.fr)

Bing®: non-destructive wood quality analysis system — [bing@cirad.fr](mailto:bing@cirad.fr)

Wisis®: system for in situ testing of wooden structural elements — [wisis@cirad.fr](mailto:wisis@cirad.fr)

Tropical Timber Atlas: presents the characteristics of 300 species. Get yours on:



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