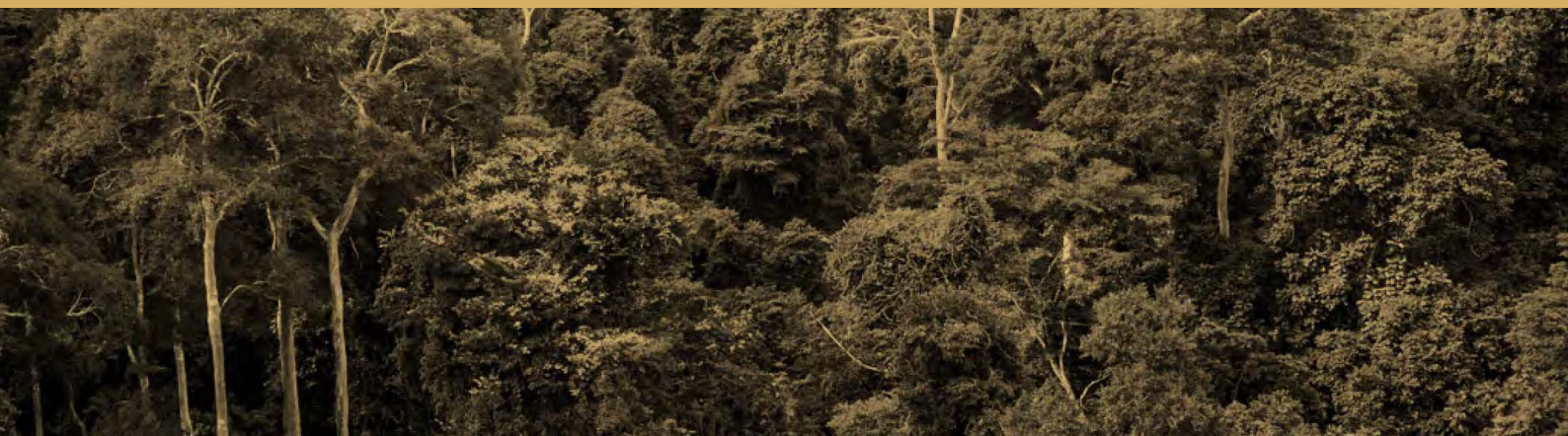




COMPENDIUM
OF SOME
GHANAIAN
TIMBER SPECIES
SECOND EDITION



Knowledge for World Conservation (KWC)
Climate, Forests, and People



Nature & Development Foundation



COMPENDIUM OF SOME GHANAIAN TIMBER SPECIES

SECOND EDITION

KNOWLEDGE FOR WORLD CONSERVATION (KWC)
DECEMBER 2024



Knowledge for World
Conservation (KWC)
Climate, Forests, and People



Nature &
Development
Foundation





DISCLAIMER

This compendium has been developed under the project “Building Capacities of Small-Medium Forest Enterprises to produce and Trade in legal timber in Ghana and Liberia –Phases II and III” with funding support from donor partners including the Foreign Commonwealth and Development Office (FCDO).



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INSTITUTIONAL PROFILES



Knowledge for World Conservation (KWC)

Knowledge for World Conservation (KWC), formerly the Kumasi Wood Cluster Association, is a leading natural-resource-based non-profit organization founded in 2004 and headquartered in Kumasi, Ghana. Dedicated to sustainable forest management, climate change adaptation, and environmental protection in Ghana, KWC works collaboratively with the private sector, government agencies like the Forestry Commission of Ghana, local communities, and other stakeholders. Originally focused on supporting small and medium forest enterprises (SMFEs), KWC now embraces a broader vision that integrates ecological health with community well-being. Its initiatives promote responsible forestry practices, smart forest landscape monitoring biodiversity preservation, and the sustainable use of underutilized timber species to reduce deforestation. KWC empowers SMFEs to adopt sustainable techniques, develop value-added forest products, and access markets for sustainably produced goods. The organization actively engages forest-dependent communities by promoting alternative livelihoods, supporting community-based natural resource management, and engendering environmental stewardship. These efforts aim to ensure the sustainability of Ghana's forests while enhancing the livelihoods of those who depend on them. For more information, visit <http://kwcgh.org>



Forestry Research Institute of Ghana of the Council for Scientific and Industrial Research (CSIR-FORIG) is one of the 13 institutes of CSIR. It was fully established as a research institute under the then Ghana Academy of Sciences placed under the Council for Scientific and Industrial Research (CSIR). CSIR-FORIG has identified some lesser used and lesser known timber species on the market without adequate technical information for their efficient use. Their technological properties, according to FORIG, are not known and may be used improperly and generate a lot of waste. They seek to collaborate with key stakeholders for the efficient use of these timber species. For more information visit <https://csir-forig.org.gh/>



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LIST OF ACRONYMS

AAC	Annual Allowable Cut
AAMUSTED	Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development
DBH	Diameter at Breast Height
FC	Forestry Commission
FORIG	Forestry Research Institute of Ghana
HVTCs	High Volume Timber Consumers
KWC	Knowledge for World Conservation
LKS	Lesser-Known Timber Species
LUS	Lesser-Used Timber Species
MoE	Modulus of Elasticity
MoR	Modulus of Rapture
NDF	Nature and Development Foundation
RMSC	Resources Management Support Center
TIDD	Timber Industry Development Division



ACKNOWLEDGEMENT

The Knowledge for World Conservation (KWC) extends its heartfelt gratitude to donor organizations, including the Foreign, Commonwealth, and Development Office (FCDO) of the United Kingdom, for funding the development of these compendium editions under the project “Building Capacities of Small-Medium Forest Enterprises to Produce and Trade in Legal Timber in Ghana and Liberia – Phases II and III.”

We deeply appreciate the unwavering support of the Nature and Development Foundation (NDF), whose partnership with KWC and leadership role in these projects led to creation of this revised edition. Special recognition is due to Mr. Gustav Adu, Mrs. Betty Boante Abeyie, and Mr. Stanley Boakye-Achampong of KWC for their invaluable contributions in conceptualizing and simplifying the visualization of the technical wood properties and uses, as well as overseeing the general review, editing, and publication of the compendium.

KWC acknowledges the crucial technical assistance provided by the Council for Scientific and Industrial Research - Forestry Research Institute of Ghana (CSIR-FORIG). We are particularly grateful to Mr. Francis Wilson Owusu of CSIR-FORIG and Dr. Emmanuel Appiah-Kubi of AAMUSTED, whose expertise as consultants was instrumental in compiling the data for this compendium.

Special thanks go to the Ghana Chamber of Construction Industry (GhCCI), categorized as High Volume Timber Consumers (HVTC), for their adoption of the compendium and active collaboration in creating awareness, providing training, and disseminating this resource among their membership. Their observations and suggestions greatly informed the revisions in this second edition, which aims to serve a broader audience, including processors, traders, and final consumers of timber and wood products.

We also extend our sincere appreciation to the Scientific Editor, Dr. Margaret Sraku-Lartey of CSIR-FORIG, for her meticulous editing of the compendium, and to the Graphic Designer, Mr. Vincent Gross Hope and Mr. David Adu from the Kwame Nkrumah University of Science and Technology (KNUST), for creating the infographics and layout design that bring this resource to life. KWC is profoundly grateful for the collective efforts and contributions that have made this second edition a reality.



FOREWORD

The timber and wood industry remains an integral pillar of Ghana's economy, supporting livelihoods, driving construction, and contributing to the preservation of our nation's rich biodiversity. Over the years, the industry has faced critical challenges, including unsustainable logging practices, underutilization of lesser-known timber species, and the need to align with both local and international timber regulations. In this context, the revised Compendium of Lesser Known and Lesser Used Timber Species emerges as a vital resource for promoting sustainability and resilience in Ghana's timber and wood sector.

The original edition of this compendium, developed with a focus on 33 naturally occurring lesser-known and lesser-used species, marked a groundbreaking effort to promote the use of these underutilized species among High Volume Timber Consumers (HVTCs). It provided a much-needed solution to reduce over-reliance on a limited number of well-known timber species, which contributes to deforestation and ecosystem imbalance. The compendium simplifies and graphically presents technical information which make these wood species accessible to everyday timber and wood product consumers who might otherwise struggle with technical jargons and information. The success of the first edition underscores the importance of disseminating knowledge to advance responsible timber usage and legal trade.

The second edition builds on this foundation with a significantly expanded scope. It incorporates 11 additional species, six of which are plantation timber species, carefully selected to enhance diversity in timber utilization. This edition offers straight-to-the-point information on the wood characteristics, technical and working properties, and practical applications of these species. The second edition broadens its relevance beyond HVTCs to encompass processors, traders, and final consumers—those who ultimately shape the demand for timber species. This comprehensive approach not only helps users identify and procure legal timber fit for purpose but also ensures adherence to Ghana Standards Authority requirements, quality control measures, and the building and construction codes of Ghana. It promotes the sustainable use of timber in construction, furniture production, and beyond, providing the needed stopgap for immediate industry needs and long-term environmental sustainability.

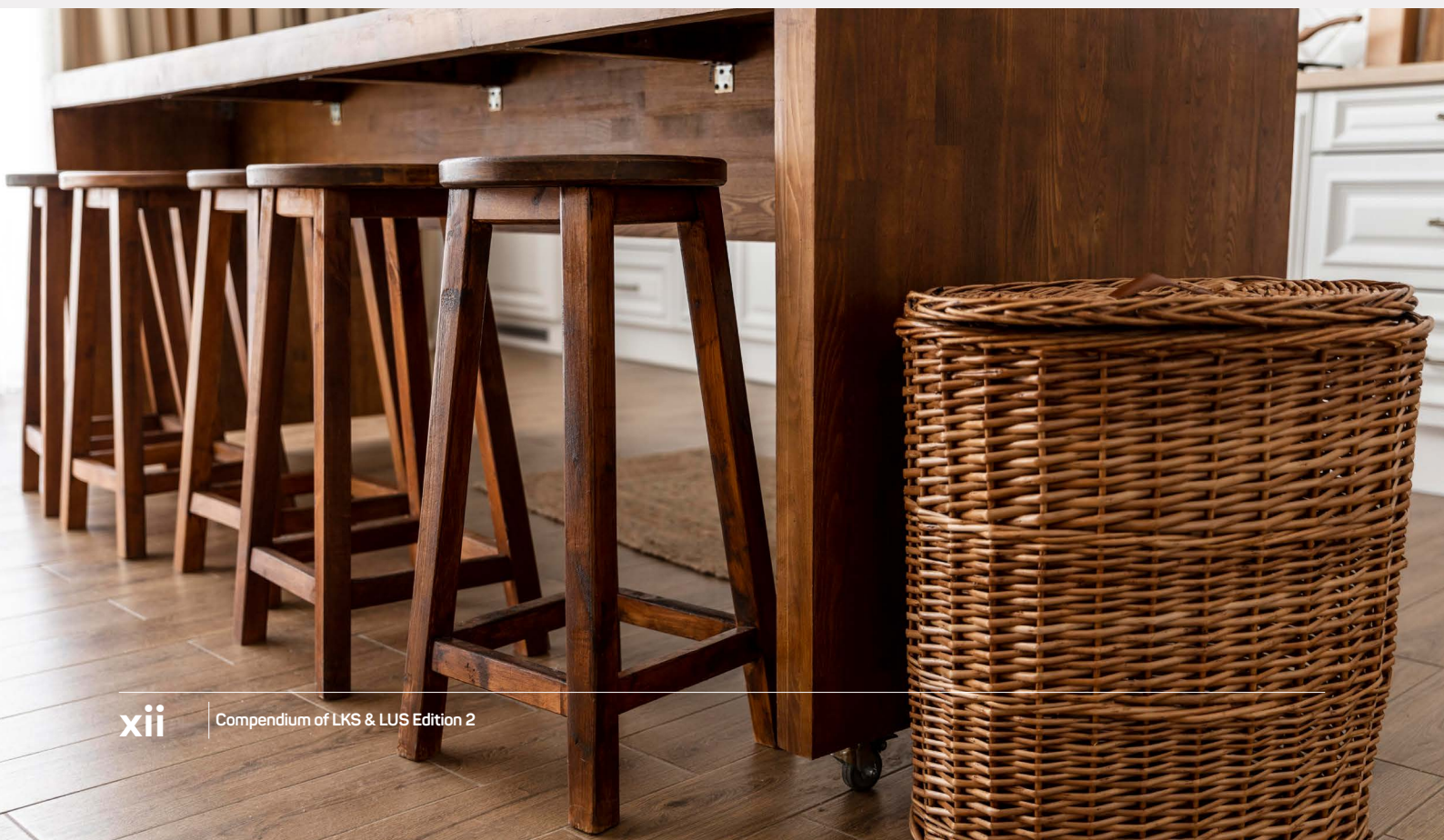
The significance of this compendium extends beyond Ghana's borders. It aligns with international timber regulations, such as the European Union Timber Regulation (EUTR) and the Forest Law



Enforcement, Governance and Trade (FLEGT) initiative, and ensures that Ghana's timber industry remains competitive on the global stage. Locally, it supports compliance with the Timber Resource Management and Legality Licensing Regulations, 2017 (LI 2254) and related regulations and policies aimed at conserving forest resources while meeting the growing demand for legal timber. Additionally, the inclusion of plantation timber species underscores Ghana's commitment to climate change adaptation and reforestation, core principles of sustainable forest management.

This compendium contributes to the global agenda of environmental conservation and resource efficiency viz promoting responsible production and consumption (SDG 12) and fostering sustainable management of terrestrial ecosystems (SDG 15). Furthermore, its focus on community engagement and the economic empowerment of small and medium forest enterprises aligns with SDG 8, which emphasizes decent work and economic growth.

As Ghana's timber and wood industry continues to evolve, resources like this compendium serve as indispensable tools for driving sustainable practices. Encouraging the use of lesser-known and lesser-used species leads to a reduced pressure on overexploited timber resources, conserves biodiversity, and enhances the economic viability of underutilized species. The revised Compendium of Lesser Known and Lesser Used Timber Species is not just a book; it is a call to action. It invites all stakeholders-policy makers, industry leaders, traders, and consumers-to adopt sustainable practices and make informed decisions that secure the future of Ghana's forests and the livelihoods they sustain. As we present this second edition, KWC reaffirms its commitment to the sustainability of Ghana's timber and wood industry and to the global goal of environmental stewardship.





COMPENDIUM OF FORTY-FOUR GHANAIAN TIMBER SPECIES



INTRODUCTION

The aim of this book is to provide technical information to help utilisers of Ghanaian timber species to select appropriate wood species that will suit their purposes and to have them processed in the most efficient manner with respect to the properties of each timber species. Forty-four (44) timber species, including plantation timber, classified as lesser-known (LKS) and lesser-used (LUS), and available for high volume timber consumers, as well as processors, traders and final consumers have been selected for this book. For ease of accessibility of information, uniform arrangements of headings and sub-headings have been used in the description of all the selected timber species. Most of the technical information that have been compiled on the selected timber species were obtained from tests that have been undertaken at the Forestry Research Institute of Ghana (FORIG) of the Council for Scientific and Industrial Research (CSIR). Although care was taken, as much as possible, to obtain representative materials for the tests, it should be noted that the properties of any timber species are liable to considerable variation.



SELECTION OF LUS AND LKS

The selection of the forty-four (44) LUS and LKS including five plantation timber species, as shown in Table 1, was based on data on plantations development in Ghana (FC-RMSC), the 2015-2018 national timber allocation yield (FC-RMSC), export of Ghana's timber and wood products and the domestic timber market surveys that had been undertaken by CSIR-FORIG from 2012 to 2018. After thorough discussions of the timber species from these sources, based on their conservation status (lower risk and least availability concern), the 44 LKS and LUS including plantation species, were validated for local promotion and utilization to support consumers, especially the High Volume Timber Consumers (HVTCS) in Ghana. The five (5) plantation timber species in the list of the 44 selected species are among others that have been selected by the Forestry Commission of Ghana for promotion (Table 1).





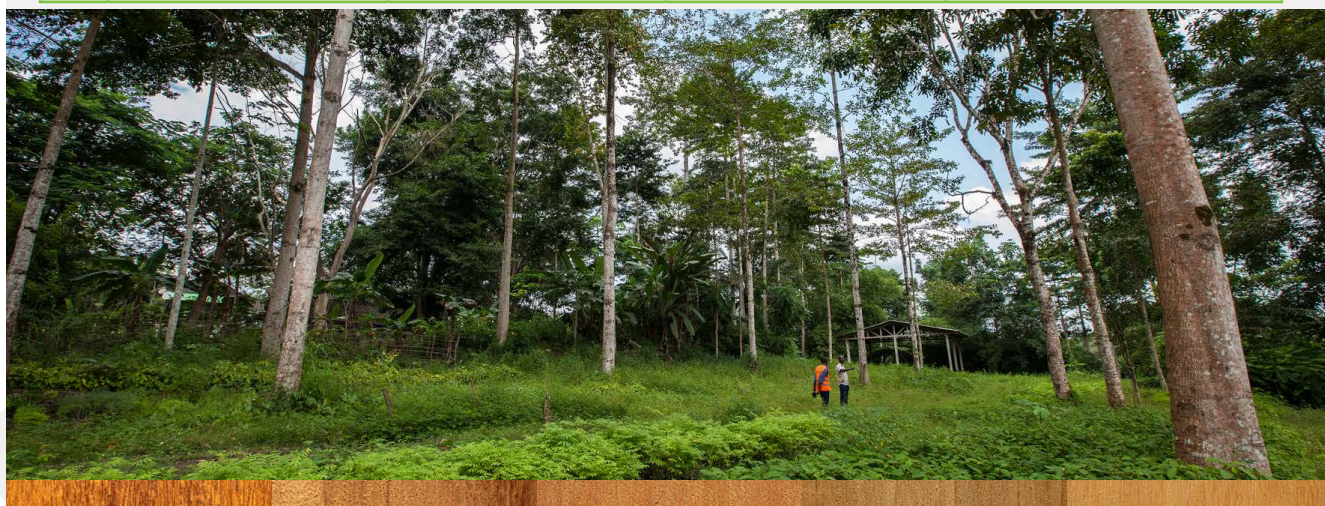
Table 1:

LIST OF 44-SELECTED TIMBER SPECIES

#	Local Name	Scientific Name	Trade Name(s)	Common / Local Names
NATURAL FOREST TIMBER SPECIES				
1	Afam	<i>Parinari excelsa</i>	African Greenheart; Sougue; Afam; kotosima	Afam, Ofam, Pembe, Piolo, Punini, Mvia, Kototrampo, Eri, Kaleason, Funfunga, Potipoti, Pumfumbile, kwinabuka, Nya, Tulingi, Kwaedua, Kotosima, Ofam
2	Akasaa	<i>Chrysophyllum albidum</i>	Chrysophyllum	Akasaa
3	Akata	<i>Rhodognaphalon buonopozense</i>	Kapokier, Bombax	Akata, Akonkodie, Voondaa / Vabga / Vonga / Yabaga, Wudese / Agudese
4	Akye	<i>Blighia sapida</i>	Blighia, Tsana, Akyee apple	Akye, Akyee-fufuo, Tsana, Takwadua, Kaka, Akyea, Adza, Ayigbe atia, Hatsi, Kinatso, Kake, Chira, Pehega, Hatsɛi, Kiinatso
5	Ananta	<i>Cynometra ananta</i>	Ananta, Apome	Ananta, Wonyae, Apome, Tahorowa, Takorowa. Awonia, Anantaa
6	Asanfena	<i>Aningeria altissima</i>	Asanfena	Asanfena
7	Asoma	<i>Parkia bicolor</i>	Parkia, Essang	Asoma
8	Avodire	<i>Turraeanthus africanus</i>	Avodire	Apapaye, Apaya, wansenwa, Lusamba, Aniadwen; Wonzanwa; Wogyia; Gakrada; Sunkroasu; Wansenwa
9	Bompagya	<i>Mammea africana</i>	African Apple, Oboto	Bompagya
10	Dahoma	<i>Piptadeniastrum africanum</i>	Dahoma	Dahoma

11	Danta	<i>Nesogordonia papaverifera</i>	Danta, Kotibe	Danta
12	Denya	<i>Cylicodiscus gabunensis</i>	Okan, Denya	Denya
13	Duabankye	<i>Dialium aubrevillei</i>	Duabankye, Eyoum	Duabankye, Mfang, Kasusu, Kofina, Ziba
14	Dubinibiri	<i>Lovoa trichilioides</i>	African Walnut	Dubinibiri
15	Edinam	<i>Entandrophragma angolense</i>	Edinam, Tiama	Edinam
16	Emire	<i>Terminalia ivorensis</i>	Emeri, Emire	Emire, Dzogbedodo
17	Esa	<i>Celtis spp</i>	Celtis, Ohia	Esa
18	Essia	<i>Petersianthus macrocarpus</i>	Petersianthus, Essia	Essia
19	Hotrohotro	<i>Hannoa klaineana</i>	Hannoa, Effeu, Fotie	Fotie, Hotrohotro
20	Hyedua	<i>Daniellia ogea</i>	Ogea, Faro,	Hyedua, Ehyedua
21	Krayie	<i>Pterocarpus erinaceus</i>	Rosewood	Krayie, Rosewood, Nelik, Nia, Tfentenga, Jugusi, Naji, Doti, Kalayu, Etoti
22	Kroma	<i>Klainedoxa gabonensis</i>	Kroma, Eveuss	Kroma / Kruma
23	Kumanini	<i>Lannea welwitschii</i>	Kumbi, Lannea, Kumanini	Kumanini, Eko, Loloti, Abalapuli, Bopire
24	Kwabohoro	<i>Guarea cedrata</i>	Bossé, Scented Guarea	Kwabohoro
25	Kyenkyen	<i>Antiaris toxicaria</i>	Chenchen, Antiaris	Kyenkyen, Logoti / Logotsi, Logo
26	Kyere	<i>Pterygota macrocarpa</i>	Koto, Pterygota	Kyere / Kyereye / Koto
27	Nyankom	<i>Heritiera utilis</i>	Niangon	Nyankom, Niangon
28	Ofram	<i>Terminalia superba</i>	Limba, Ofram, Frake	Ofram, Kegblale / Frang
29	Ohaa	<i>Sterculia oblonga</i>	Sterculia, Eyong, Ohaa	Ohaa, Pumpung, Pulpung, Akple, Danve, Lolo
30	Okoro	<i>Albizia zygia</i>	Albezia, Okoro	Okoro Kulo / Xeyi, Ziwor

31	Onyina	<i>Ceiba pentandra</i>	Ceiba, Fuma	Onyina, Guug / Gomga / Gungu/ Gbang, Rimi, Kakre, Vuti, Atepre, Lœe, Ofua, Vule, Ehuti
32	Onyinakoben	<i>Rhodognaphalon brevicuspe</i>	Bombax, Alone	Onyinakoben
33	Otie	<i>Pycnanthus angolensis</i>	Illomba, Otie	Otie
34	Papao	<i>Azelia africana</i>	Azelia, Papao	Papao, Kpikalic/ Kpaliga/Kolo. Kakala, Wokpa
35	Potrodom	<i>Erythrophleum ivorensse</i>	Potrodom, Tali	Potrodom, Elagji, Atsa, Etsati
36	Senya	<i>Daniellia oliveri</i>	Senya	Senya, Nyaa, Kacheilo, Maje, Nyoo, Kunyan
37	Watapuo	<i>Cola gigantea</i>	Colawood, Watapuo	Watapuo, Dodowa, Uwu
38	Wawabima	<i>Sterculia rhinopetala</i>	Sterculia brown, Wawabima	Wawabima
39	Yaya	<i>Amphimas pterocarpoides</i>	Lati, Amphimas	Yaya
PLANTATION TIMBER SPECIES				
40	Cedrela	<i>Cedrela odorata</i>	Cedrela	Dua-gyeene, Maxican cedar, Honduras cedar
41	Eucalyptus	<i>Eucalyptus spp</i>	Eucalyptus	Eucalyptus
42	Gmelina	<i>Gmelina arborea</i>	Gmelina	Gmelina
43	Teak	<i>Tectona grandis</i>	Teak	Teak
44	Yorke	<i>Broussonetia papyrifera</i>	Paper mulberry, deer's tree, tapa cloth tree	Yorke, wauke





EXPLANATORY NOTES

This section gives the definitions of terms as used to describe the timber species and explanations to the timber properties that are considered in this compendium. The properties considered include; Ecology and Distribution, Species Rating, Xylem or lumber Description, Movement in Service, Natural Durability / Treatability, Processing and Working Properties, Mechanical Strength Properties and Uses.

ECOLOGICAL ZONES AND DISTRIBUTION OF TIMBER SPECIES

Ghana has been divided into different ecological zones. These are Evergreen – Wet /Moist/ Upland, Moist Semi-deciduous, Dry Semi-deciduous and Savannah. Description of where the species grow and their availability are given (Figure 1 and Table 2).

- Savannah
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Coastal Savannah
- Transitional Zone



Figure 1: The Ecological zones in Ghana



FOREST STATUS

This is the availability of the species based on their quantities or volumes in terms of the harvestable stems. It indicates their status as to whether they are threatened or available for use. This classification of the species availability in the forest is with respect to an estimated national annual total harvestable stems, which was the data available during the period of compiling this technical information (Table 2).

Table 2.

Classification of the abundance of timber species in the forest

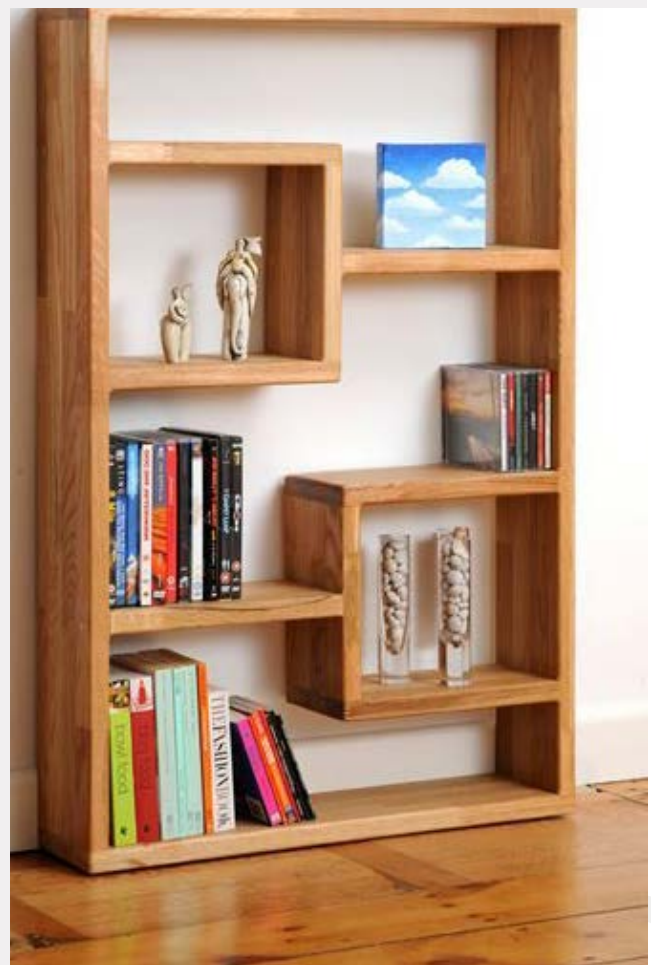
National Annual Harvestable Stems	Class	Remarks
>100,000	Very High	Most abundant for extraction
10,000 – 99,999	High	More abundant
1,000 – 9,999	Medium	Abundant for extraction
300 – 999	Low/ Medium	In average abundance
<300	Low	Limited in abundance



STAR RATING

This is the star categories of conservation priorities for wood species (Table 3). The species available in the forest are classified into star ratings (colours), which indicate their levels of extraction. The following are the ratings:

	Green No particular conservation concern. Widely available, not threatened
	Pink Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.
	Red Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC
	Scarlet Common, but under high pressure from over-exploitation. Strict control on AAC if they are to remain commercially viable. Level of cut is more than 200% of AAC. Protection on all scale is vital





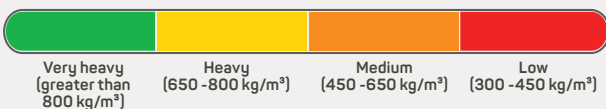
DENSITY

Density is the weight or mass of wood divided by the volume of the specimen at a given moisture content. The unit for density is typically expressed as kilograms per cubic meter (kg/m^3). Two major factors affecting the weight of wood products are density of the basic wood structure and moisture content. A third factor, minerals and extractable substances, has a marked effect only on a limited number of species. The density of wood, exclusive of water, varies greatly both within and between species. Usually determination of density is sufficiently accurate to permit proper utilization of wood products where weight is important. Specific gravity is the density of the sample normalized to the density of water.

The densities of the selected timber species ranged from minimum to maximum at 12-15% moisture content and that the mean density for each of the species has been used in this technical information bulletin.

The density of the species fall within one of the classification by the TIDD 2012 in the categories below:

1. Low ($300 - 450 \text{ kg}/\text{m}^3$)
2. Medium ($450 - 650 \text{ kg}/\text{m}^3$)
3. Heavy ($650 - 800 \text{ kg}/\text{m}^3$) and
4. Very heavy (greater than $800 \text{ kg}/\text{m}^3$)

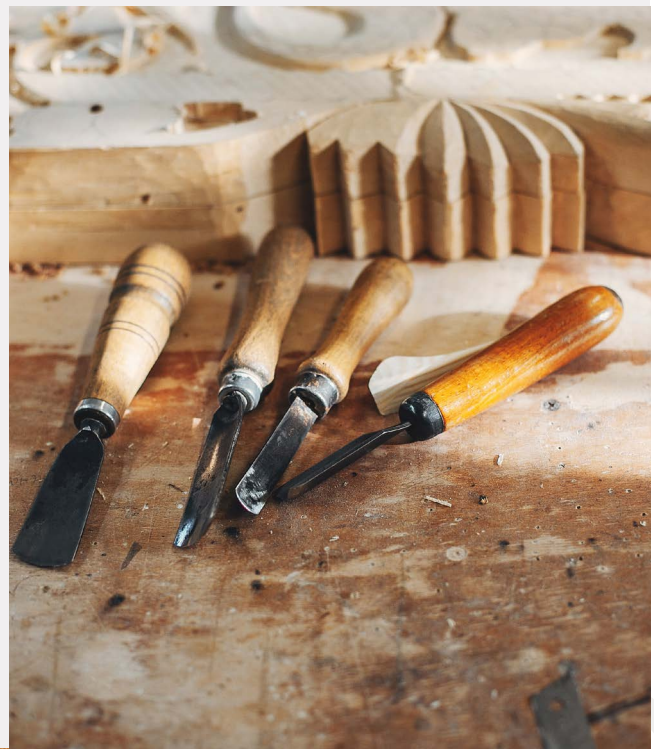


MOVEMENT IN SERVICE

Movement is a dimensional change that occurs during the service life of seasoned wood due to environmental changes. It is a measure of the dimensional stability of wood material when in service. Movement of timbers with higher values results in the loosening of joints and in the development of unsightly gaps.

Wood's stability is subject to variations in environmental conditions – moisture content, humidity, temperature. Based on laboratory tests, movement in service is classified into the following:

- Small : $< 2.0\%$ (Tangential); $< 1.0\%$ (Radial)
- Medium : $2.0 - 2.5\%$ (Tangential); $1.0 - 1.7\%$ (Radial)
- Large : $> 2.5\%$ (tangential); $> 1.7\%$ (Radial)





NATURAL DURABILITY /TREATABILITY

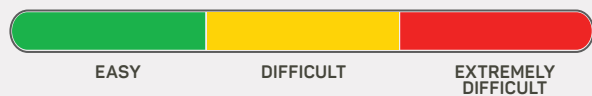
Durability – the ability of the wood material to resist natural decay by wood-decaying micro-organisms (fungi, termites).

Treatability – the material’s ability to absorb and retain chemicals or extracts to make it durable during treatment. On the basis of laboratory tests, the durability and treatability has been rated as follows:

- Durability – Not durable, Moderately durable, and Durable



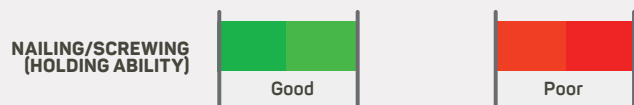
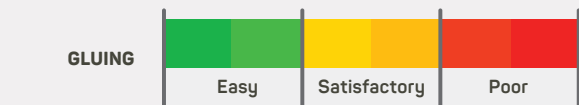
- Treatability – Easy, Difficult and Extremely difficult



SAWING AND WORKING PROPERTIES

These are described as follows:

- **Sawing:** Easy, Quite difficult and Difficult
- **Machining:** Poor, Good and Excellent
- **Gluing:** Poor, Satisfactory and Good
- **Nailing / Screwing (HOLDING ABILITY):** Poor and Good
- **Ease of Nailing / Screwing:** Easy, Quite difficult and Difficult (pre-boring needed)
- **Finishing:** Poor, Satisfactory and Good





MECHANICAL STRENGTH PROPERTIES

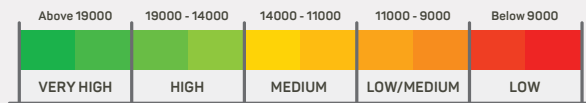
The strength properties of a species are its ability to withstand external loading without failure during its service life.

Modulus of rupture - MoR (**Breaking strength**) and Modulus of elasticity- MoE (**Flexibility**), as shown in Table 3, are used to determine the wood's strength class.

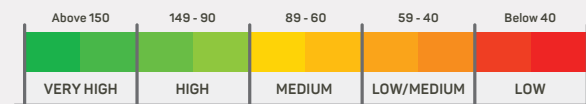
Table 3.
The classification of two mechanical strength properties of wood

MoE	MoR	Class	Remarks
>19000	>150	Very High	Heavy Civil works
14000 - 19000	90 - 149	High	Major construction works
11000 - 14000	60 - 89	Medium	Minor works - low loads / furniture
9000 - 11000	40 - 59	Low/ Medium	Non-load bearing members / furniture
<9000	<40	Low	Non-load bearing members

Modulus of Elasticity MoE (N/mm²)



Modulus of Rupture MoR (N/mm²)



USES

Some typical uses of each of the timber species are listed but these should not be considered as exhaustive since the timber market, both locally and internationally is dynamic with new uses always being discovered. However, it indicates the type of end-uses for which each timber species is suited.





NATURAL FOREST TIMBER SPECIES

This section graphically presents the technical description of (39) forest timber species.

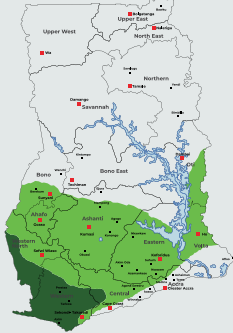
AFAM

Scientific name: *Parinari excelsa*

Local name: Afam, Ofam, Pembe, Piolo, Punini, Mvia, Ktotrampo, Eri, Kaleason, Funfunga, Potipoti, Pumfumbile, kwinabuka, Nya, Tulingi, Kwaedua, Kotosima, Ofam

Trade name: African greenheart, Afam, Sougue, Kotosima, kokadi

01 Ecology and Distribution



Parinari excelsa is found mostly in the Moist and Wet Evergreen forests zones of Ghana.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

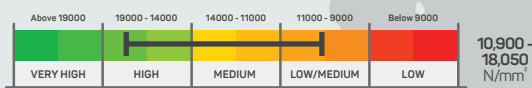
02 Lumber Description

Heartwood: Reddish-brown / Pale red, chocolate-brown

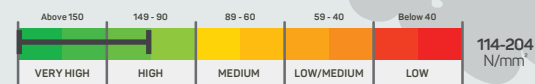
Sapwood: Pale-yellow / yellowish white

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

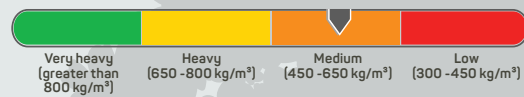


Modulus of Rupture (MoR) - Breaking strength

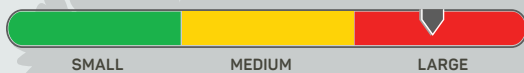


04 Physical Properties

Density

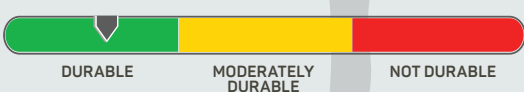


Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	SAWING: Quite difficult to works well with hand and machine tools		
	Easy	Quite Difficult	Difficult

SAWING: Quite difficult to works well with hand and machine tools

MACHINING	MACHINING		
	Excellent	Good	Poor

GLUING	GLUING		
	Good	Satisfactory	Poor

EASE OF (NAILING/SCREWING)	EASE OF (NAILING/SCREWING): Pre-boring needed		
	Easy	Quite Difficult	Difficult

EASE OF (NAILING/SCREWING): Pre-boring needed

NAILING/SCREWING (HOLDING ABILITY)	NAILING/SCREWING (HOLDING ABILITY)		
	Good	Satisfactory	Poor

FINISHING	FINISHING		
	Good	Satisfactory	Poor

08 Uses



Heavy-duty flooring



Heavy construction



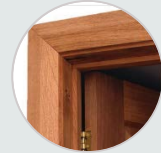
Joinery



Furniture



piles



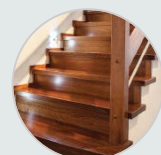
interior trim



Implements



Tool handles



Steps and Stairs

AKASAA

Scientific name: *Chrysophyllum albidum*

Local name: Akasaa

Trade name: Longhi; *Chrysophyllum*

01 Ecology and Distribution



Common in Evergreen and Moist forests of Ghana but occurs lesser in the Semi-deciduous forests.

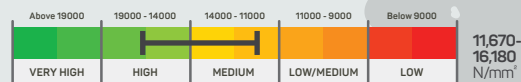
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

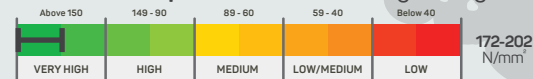
Heartwood: Reddish brown
Sapwood: Whitish

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

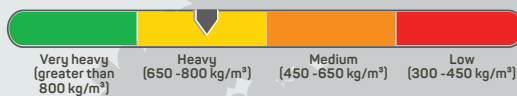


Modulus of Rupture (MoR) - Breaking strength

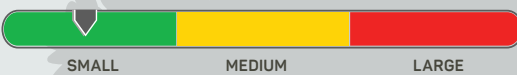


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
SAWING: Works well with hand and machine tools			
MACHINING	Excellent	Good	Poor
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Boxes



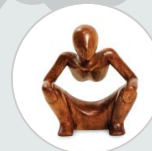
Pallets & Crates



Light construction



Furniture

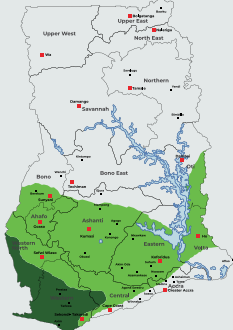


Carvings

AKATA

Scientific name: *Rhodagnaphalon buonopozense*
Local name: Akata, Akonkodie, Voondaa/ Vabga / Vonga / Yabaga, Wudese / Agu-dese
Trade name: Bombax, Kapokier

01 Ecology and Distribution



Abundant in the Dry and Moist semi-deciduous to Evergreen forests, especially in secondary forests and fallow land.

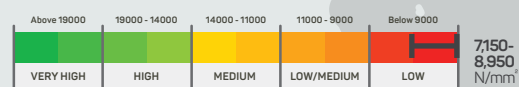
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

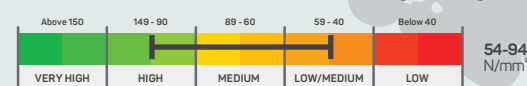
Heartwood: Pale pinkish-brown
Sapwood: Pale pinkish-brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

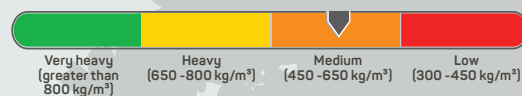


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

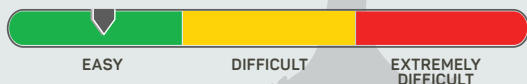


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green
 No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Plywood and veneer



Mouldings & claddings



Joinery



Furniture



Particle board



Picture frames



Pallets and crates



Carvings



Matches splints

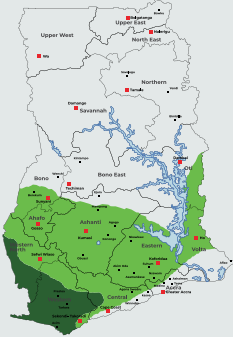
AKYE

Scientific name: *Blighia sapida*

Local name: Akye, Akyee-fufuo, Tsana, Takwadua, Kaka, Akyea, Adza, Ayigbe atia, Adza, Kake, Chira, Pehega, Hatsai, Kiinatso, Achin

Trade name: Akee, Blighia, Tsana, Akyee apple

01 Ecology and Distribution



Found mostly in the Moist Semi-deciduous and Dry Semi-deciduous forest zones of Ghana

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

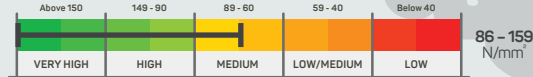
Heartwood: Orange-Brown / Reddish-brown
Sapwood: White

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility



Modulus of Rupture (MoR) - Breaking strength

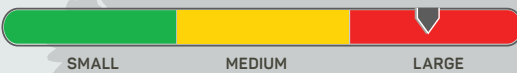


04 Physical Properties

Density

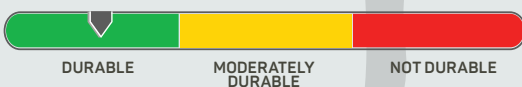


Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING / SCREWING: Quite Difficult (Pre-boring needed)			
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Construction



cabinet works



Joinery



Furniture



Boxes and Crates



Tool Handles



Carvings

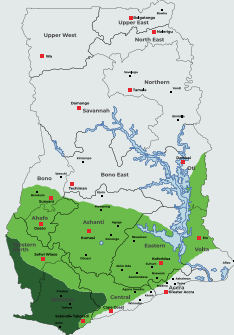


Turnery

ANANTA

Scientific name: *Cynometra ananta*
Local name: Ananta, Wonyae, Apome, Tahorowa, Takorowa. Awonia, Anantaa
Trade name: Ananta, Apome

01 Ecology and Distribution



Available in the Moist and Wet Evergreen forest types of Ghana.

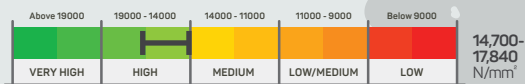
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

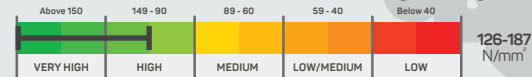
Heartwood: Dark red with darker streaks
Sapwood: Pink-brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

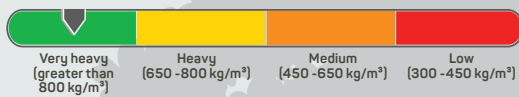


Modulus of Rupture (MoR) - Breaking strength

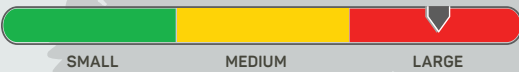


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating

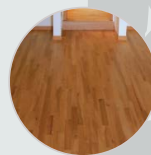


Pink
 Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Difficult to works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
EASE OF (NAILING / SCREWING): Pre-boring needed			
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Heavy flooring



bridge construction



Exterior Joinery



Furniture



Tool handles



Mine props



Railway sleepers

ASANFENA

Scientific name: *Aningeria altissima*

Local name: *Asanfena*

Trade name: *Asanfena*

01 Ecology and Distribution



Found in the Dry semideciduous forests, sparsely in Moist deciduous and in Savannah woodlands

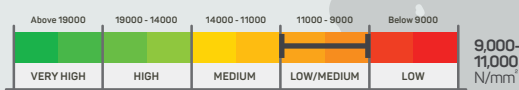
- Savannah
- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

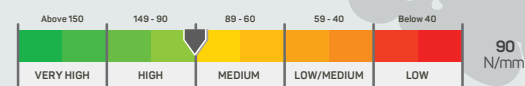
Heartwood: Yellowish white, pale brown
Sapwood: Pinkish brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

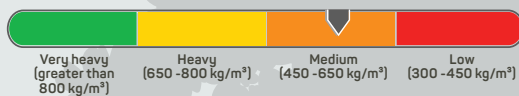


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

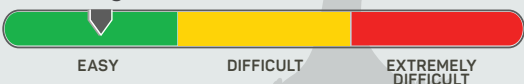


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
SAWING: Easy to saw			
MACHINING	Excellent	Quite Difficult	Difficult
MACHINING: Works well with hand and machine tools			
GLUING	Good	Quite Difficult	Difficult
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Quite Difficult	Difficult
FINISHING	Good	Quite Difficult	Difficult

08 Uses



Furniture



Mouldings

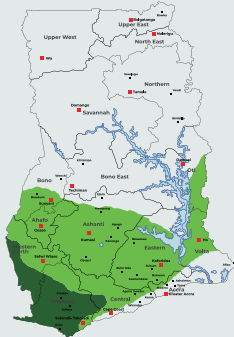


Musical instruments

ASOMA

Scientific name: *Parkia bicolor*
Local name: Asoma
Trade name: Essang; Parkia

01 Ecology and Distribution



Found in the Wet and Moist Evergreen and Moist Semi-deciduous forests.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

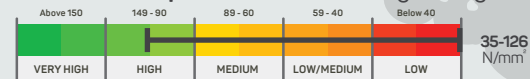
Heartwood: Pale yellow
Sapwood: Pale yellow

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

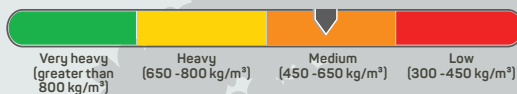


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green
 No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Light construction



Interior trim



Joinery



Furniture



Particle board



Cabinet work



Shipbuilding



Pulpwood

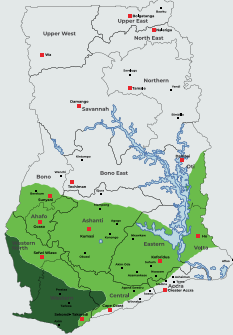
AVODIRE

Scientific name: *Turraeanthus africanus*

Local name: Apapaye, Apaya, wansenwa, Lusamba, Aniadwen; Wonzanwa; Wogy; Gakrada; Sunkraasu; Wansenwa

Trade name: Avodire

01 Ecology and Distribution



Found mostly in the Moist Semi-deciduous, Moist Evergreen forests and sparsely distributed in the Wet Evergreen of Ghana.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

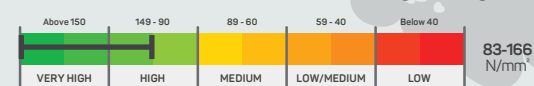
Heartwood: Creamy-white to pale-yellow, darkening to golden-yellow
Sapwood: Same as heartwood

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

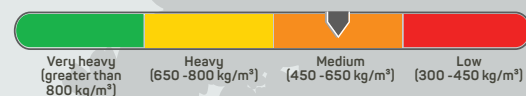


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

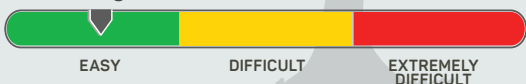


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Interior fittings



Paneling



Joinery



Furniture



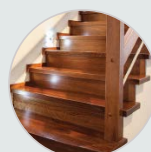
Parquet



Sliced veneer floors



Frames



Stairs

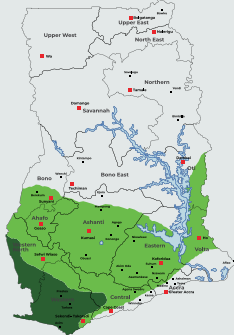
BOMPAGYA

Scientific name: *Mammea africana*

Local name: *Bompagya*

Trade name: *Bompagya, Oboto, African Apple*

01 Ecology and Distribution



Found in Wet and Evergreen as well as the South-East subtype of the Moist Semideciduous forests of Ghana.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

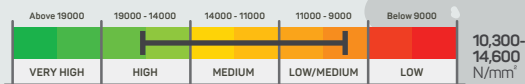
02 Lumber Description

Heartwood: Dark reddish brown to pepperish brown

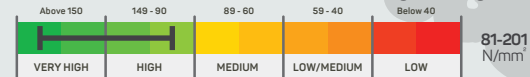
Sapwood: Pinkish brown to pale brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

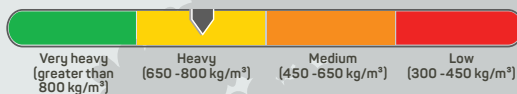


Modulus of Rupture (MoR) - Breaking strength

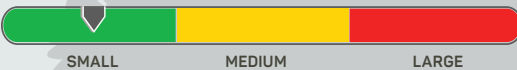


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Frames



Cabinet work



Interior and exterior joinery



Furniture

DAHOMA

Scientific name: *Piptadeniastrum africanum*

Local name: Dahoma

Trade name: African Greenheart, Dabema, Dahoma

01 Ecology and Distribution



Available in all the major forest types, except the Savannah forest.

- Coastal Savannah
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

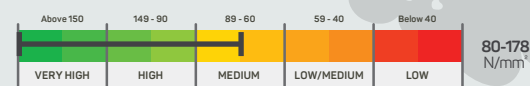
Heartwood: Light to golden brown
Sapwood: Grayish to pale straw

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

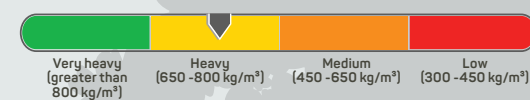


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Heavy construction



Marine construction and bridges



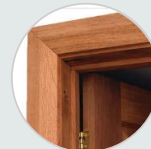
Joinery



Furniture



Mine props



Interior trim



Railway sleepers



Vehicle body

DANTA

Scientific name: *Nesogordonia papaverifera*

Local name: Danta, Apro

Trade name: Danta, Kotibe

01 Ecology and Distribution



Found in all the forest types except the Wet Evergreen forests.

- Moist/Dry Semi-deciduous
- Coastal Savannah
- Savannah
- Unavailable in these zones

02 Lumber Description

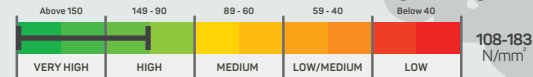
Heartwood: Mahogany red
Sapwood: Pale Mahogany red

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

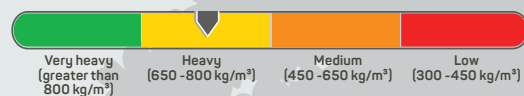


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

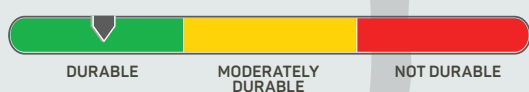


Movement in Service

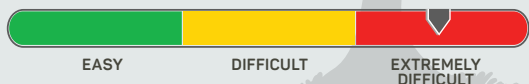


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Construction



Flooring



Joinery



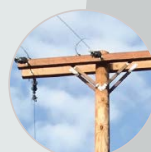
Furniture



Paneling



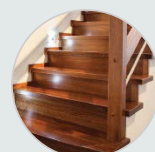
Boat building



Utility cross arms



Doors



Stairs

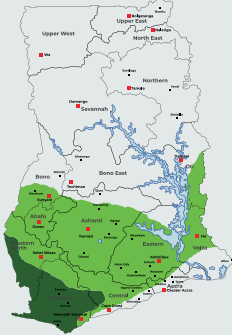
DENYA

Scientific name: *Cylicodiscus gabunensis*

Local name: *Denya*

Trade name: *Denya, Okan*

01 Ecology and Distribution



Found in the Moist Evergreen and the Moist and Dry Semi-deciduous forests.

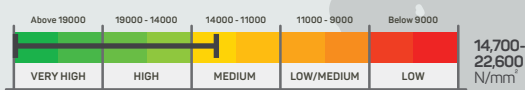
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

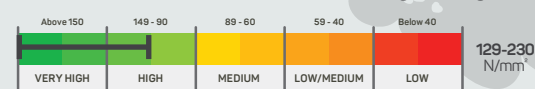
Heartwood: Yellowish brown
Sapwood: Pale pink

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

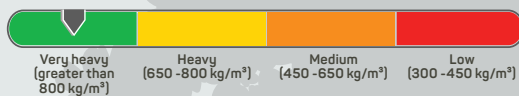


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

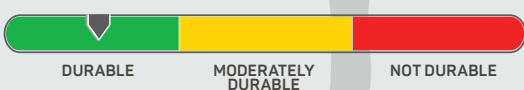


Movement in Service

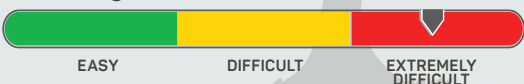


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Difficult but works well with machines			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Heavy construction



Heavy flooring



Railway sleepers



Joinery



Vehicle body



Shipbuilding



Stairs



Implements

DUABANKYE

Scientific name: *Dialium aubrevillei*
Local name: Duabankye, Mfang, Kasusu, Kofina, Ziba
Trade name: Duabankye, Eyoum

01 Ecology and Distribution



Found in the Moist Semi-deciduous, Wet and Moist Evergreen forest zones of Ghana.

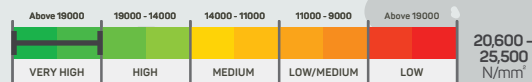
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

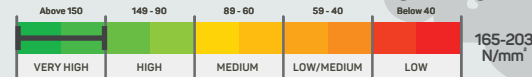
Heartwood: Pinkish-brown / Brownish-orange
Sapwood: Pale pinkish-brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

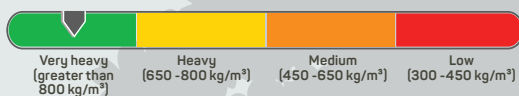


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink
 Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
SAWING: Works well with hand and machine tools			
MACHINING	Excellent	Good	Poor
MACHINING: very difficult to works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
EASE OF NAILING / SCREWING: Very Difficult (Pre-boring needed)			
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
NAIL/SCREW HOLDING ABILITY: Good, but pre-boring is required			
FINISHING	Good	Satisfactory	Poor

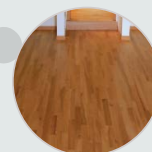
08 Uses



Heavy construction



Steps and Stairs



Heavy Flooring



Mine Props



Railway Sleepers



Sporting Goods



Agricultural Implements

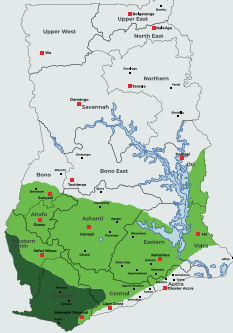
DUBINIBIRI

Scientific name: *Lavoa trichilioides*

Local name: Walnut / Dubinibiri

Trade name: African Walnut

01 Ecology and Distribution



Found in the Wet and Moist Evergreen and the South-East subtype of Moist Semi-deciduous forests

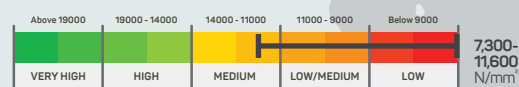
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

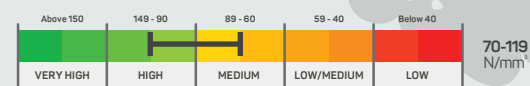
Heartwood: Yellowish brown to greyish brown, often with golden and blackish markings.
Sapwood: Pale brown to pale grey

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

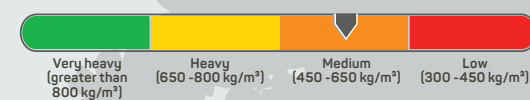


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red

Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Doors



Cabinet work



Interior and exterior joinery



Furniture



Coffins

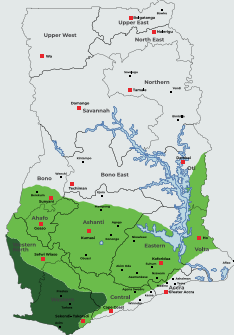
EDINAM

Scientific name: *Entandrophragma angolense*

Local name: *Edinam*

Trade name: *Edinam, Tiamo*

01 Ecology and Distribution



Moderately available in the Moist Evergreen, Wet and Dry Semi-deciduous forests.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

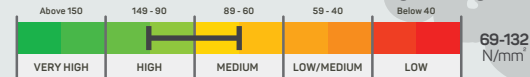
Heartwood: Pink brown
Sapwood: Creamy white or pale pink.

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

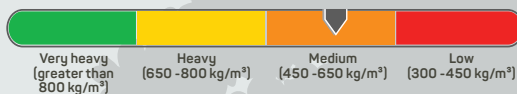


Modulus of Rupture (MoR) - Breaking strength

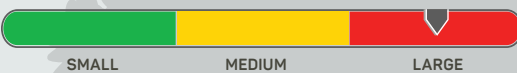


04 Physical Properties

Density



Movement in Service

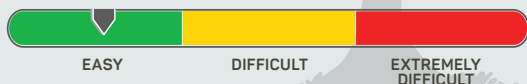


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red

Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Good

08 Uses



Plywood and veneer



Flooring



Interior joinery



Furniture



Panelling



Stairs



Vehicle bodies



Coffin



Cabinet work

EMIRE

Scientific name: *Terminalia ivorensis*

Local name: *Emire, Dzogbedoda*

Trade name: *Emire, Frameri*

01 Ecology and Distribution



Found predominantly in Moist and Dry semideciduous forests.

Moist/Dry Semi-deciduous

Unavailable in these zones

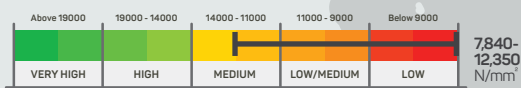
02 Lumber Description

Heartwood: Yellowish-white to pale yellowishbrown, often greenish.

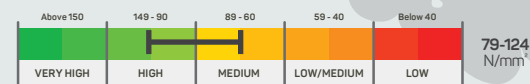
Sapwood: Same as heartwood (not clearly demarcated from the heartwood)

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

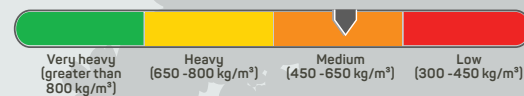


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

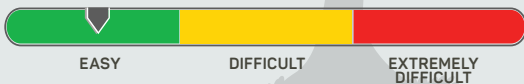


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Scarlet

Common, but under high pressure from over-exploitation. Strict control on AAC if they are to remain commercially viable. Level of cut is more than 200% of AAC. Protection on all scale is vital

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



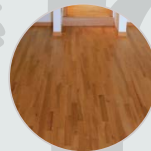
Construction



Trims and frames



Joinery



Flooring



Particle board



Boxes



crates



Vehicle bodies



Pulp

ESA

Scientific name: *Celtis zenkeri*, *Celtis mildbraedii* and *Celtis adolfi-friderici*
Local name: *Esa*
Trade name: *Ohia, Celtis*

01 Ecology and Distribution



Celtis zenkeri (Esa-kokoo) is abundant in all forest types in forest outliers near Savanna woodlands
Celtis mildbraedii (Esa-fufuo) is abundant in the Semi-deciduous forests but more abundant in the Moist Semi-deciduous forests than the Dry Semi-deciduous forests
Celtis adolfi-friderici (Esa-kosua) is moderately available in the Semideciduous forests

- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

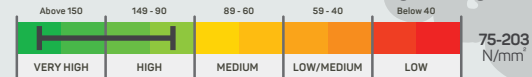
Heartwood: Yellowish or light grey. Sometimes it's brownish
Sapwood: Yellowish or light grey

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

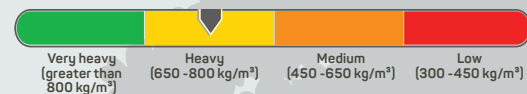


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green
 No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Plywood and veneer



Mouldings



Structural and interior joinery



Furniture



Tool handles



Flooring

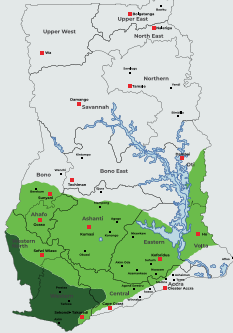
ESSIA

Scientific name: *Petersianthus macrocarpus*

Local name: *Essia*

Trade name: *Petersianthus, Essia*

01 Ecology and Distribution



Abundantly available in the Moist Evergreen and Moist Semi-deciduous forests.

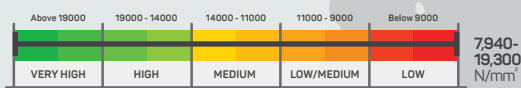
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

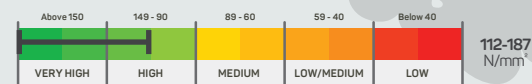
Heartwood: Reddish-brown
Sapwood: Thick yellowish colour

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

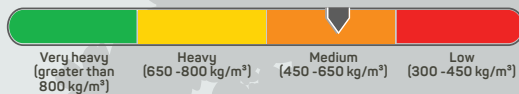


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

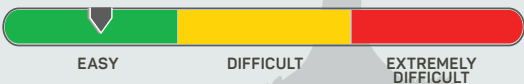


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

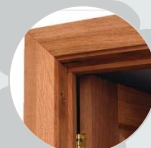
07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Difficult but works well with machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



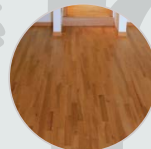
Vehicle and truck bodies



Trims and Frames



Joinery



Industrial floorings



Heavy construction



Railway sleepers



Piles



Deckings

HOTROHOTRO

Scientific name: *Hannoa klaineana*

Local name: *Fotie; Hotrohoto*

Trade name: *Hannoa, Effeu*

01 Ecology and Distribution



Moderately found in the Evergreen and Semi-deciduous forests and other forest types including secondary forest of Ghana.

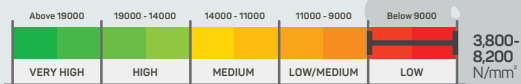
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

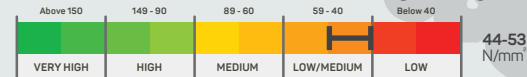
Heartwood: White or yellowish-white
Sapwood: Not differentiated from the heartwood

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

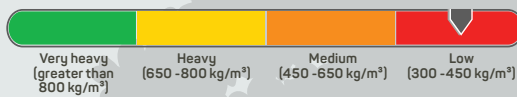


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

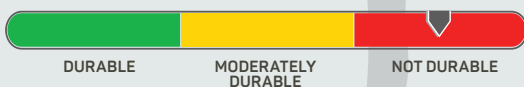


Movement in Service

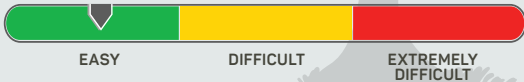


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Easy to saw with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Plywood and veneer



Tools



Cabinet work



Furniture



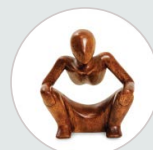
Canoes



Match box



Splints



Carvings

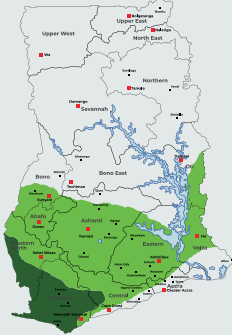
HYEDUA

Scientific name: *Daniellia ogea*

Local name: *Hyedua*

Trade name: *Ogea, Faro*

01 Ecology and Distribution



Sparsely found in all Evergreen and Moist Semi-deciduous forests of Ghana

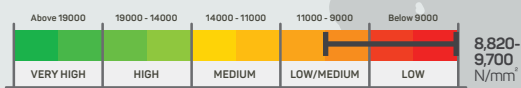
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

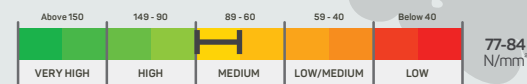
Heartwood: Pale pinkish
Sapwood: Whitish to straw coloured

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

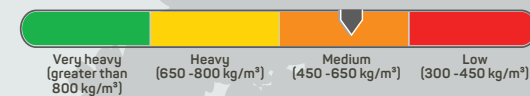


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

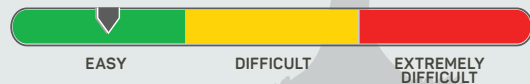


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Plywood and veneer



Boxes



Joinery



Furniture



Crates

KRAYIE

Scientific name: *Pterocarpus erinaceus*

Local name: Krayie, Rosewood, Nelik/Nia/Tfentenga/
Jugusi / Nayi, Doti / Kalayu, Etoti

Trade name: African rosewood, African barwood,
African teak

01 Ecology and Distribution



Widespread in the savanna zone and Transitional zone of Ghana and partially in Moist/Dry Semideciduous

- Savannah
- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

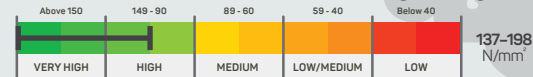
Heartwood: Yellowish brown
Sapwood: Yellowish or pale cream

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

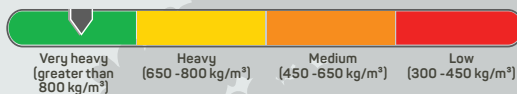


Modulus of Rupture (MoR) - Breaking strength

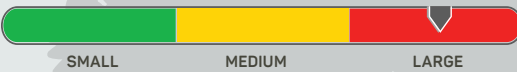


04 Physical Properties

Density

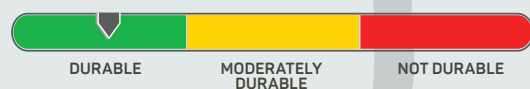


Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red

Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

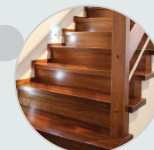
08 Uses



Heavy construction



Parquet flooring



Stairs



Furniture



Implements



Turnery



Veneer and plywood



Carvings

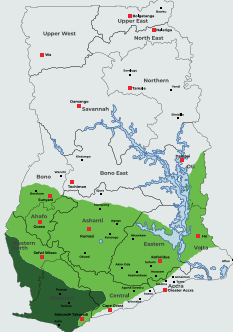
KROMA

Scientific name: *Klainedoxa gabonensis*

Local name: Kroma / Kruma

Trade name: Eveuss; Kroma

01 Ecology and Distribution



Moderately distributed in Wet and Moist Evergreen and Moist Semi-deciduous forests of Ghana.

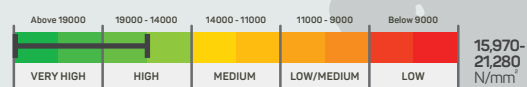
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

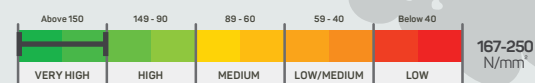
Heartwood: Orange-yellow
Sapwood: Orange-yellow

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

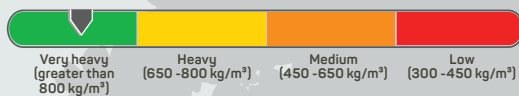


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

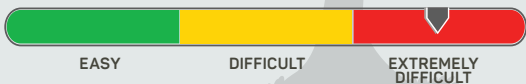


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Difficult but works well with machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
EASE OF (NAILING/SCREWING): pre-boring needed			
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Railway sleepers



Heavy flooring



Poles and piles

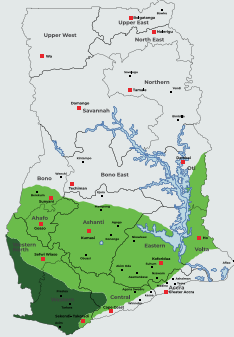


Bridges

KUMANINI

Scientific name: *Lannea welwitschii*
Local name: Kumanini, Ekoa, Loloti, Abalopuli, Bopire
Trade name: Kumbi, Lannea, Kumanini

01 Ecology and Distribution



Found mostly in the Dry and Moist Semi-deciduous and Wet and Moist Evergreen of Ghana.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

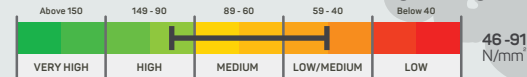
Heartwood: Light/pale brown to pinkish grey
Sapwood: Paler

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

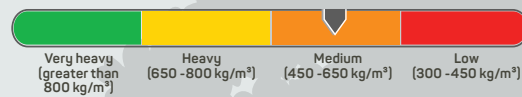


Modulus of Rupture (MoR) - Breaking strength

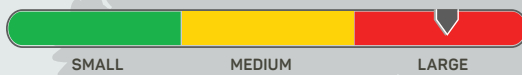


04 Physical Properties

Density



Movement in Service

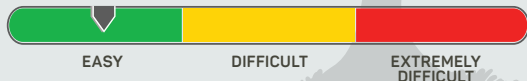


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green
 No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works quite well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Plywood and veneer



Mouldings



Light joinery



Furniture



particle boards



paneling



Crates



canoes



cabinet

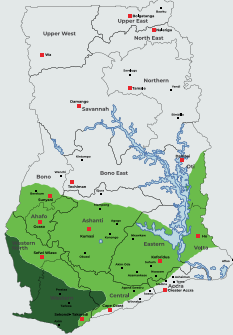
KWABOHORO

Scientific name: *Guarea cedrata*

Local name: Kwabohoro

Trade name: Bossé, Scented Guarea

01 Ecology and Distribution



Moderately available in the Wet and Moist Evergreen as well as the Moist and Dry Semideciduous forests

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

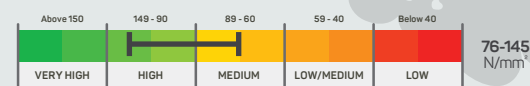
Heartwood: Pale pinkish brown
Sapwood: Yellowish white

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

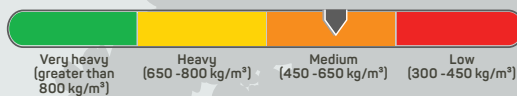


Modulus of Rupture (MoR) - Breaking strength

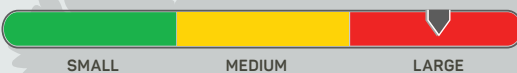


04 Physical Properties

Density



Movement in Service

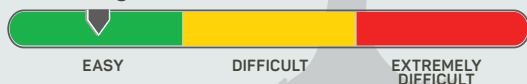


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Flooring



Panelling



Joinery



Furniture



Frames



Doors



Shipbuilding



Veneer and plywood



Vehicle bodies

KYENKYEN

Scientific name: *Antiaris toxicaria*
Local name: *Kyenkyen, Logoti /Logotsi, Logo*
Trade name: *Chenchen, Ako, Antiaris*

01 Ecology and Distribution



Found in all forest types and transition zone, mostly in the moist semi-deciduous forests, except Savannah

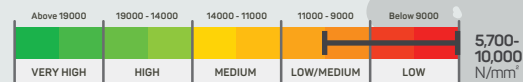
- Coastal Savannah
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

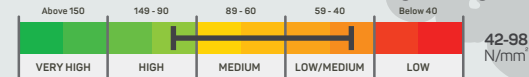
Heartwood: Whitish to pale yellow heartwood or pale-yellow brown
Sapwood: No distinction between heartwood and sapwood

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

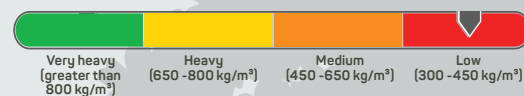


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

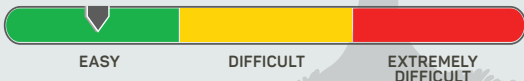


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Panelling



Claddings



Interior joinery



Furniture

KYERE

Scientific name: *Pterygota macrocarpa*

Local name: Kyereye, Kyere, Koto

Trade name: Koto

01 Ecology and Distribution



Found in the Transitional zone, Moist and Dry Semi-deciduous forests, but absent from the Evergreen forest

- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

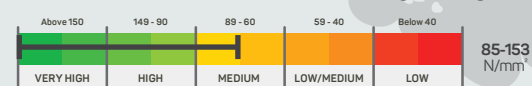
Heartwood: Creamy white
Sapwood: Creamy white

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

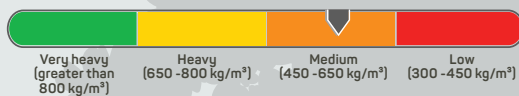


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

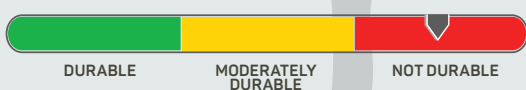


Movement in Service

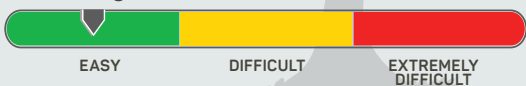


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red

Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

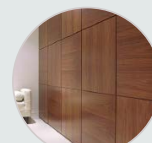
08 Uses



Plywood and veneer



Mouldings



Interior panelling

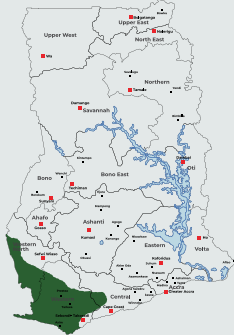


Light carpentry

NYANKKOM

Scientific name: *Heritiera utilis*
 Local name: Nyankom
 Trade name: Niangon

01 Ecology and Distribution



Moderately available but confined to the Wet and Moist evergreen forests of Ghana

- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

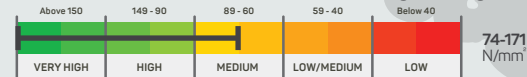
Heartwood: Pink brown Mahogany colour
 Sapwood: Pale Mahogany colour

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

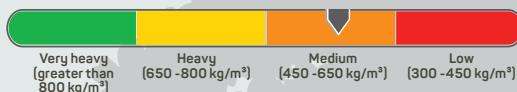


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

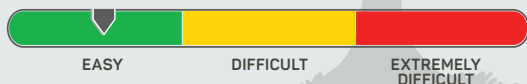


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red

Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Window and door frames



Mouldings



Panelling



Furniture



Doors

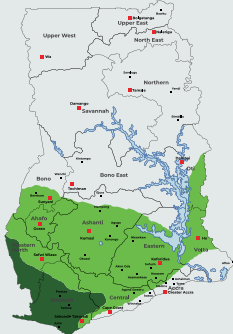


Boat construction

OFRAM

Scientific name: *Terminalia superba*
Local name: Ofram, Kegblale / Frangc
Trade name: Ofram, Limba, Frake

01 Ecology and Distribution



Predominant in the Moist Evergreen, Moist and Dry semi-deciduous forests

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

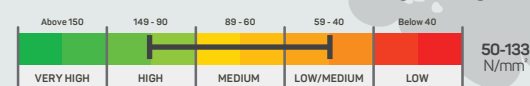
Heartwood: Pale-yellowish white with blackishbrown stripes or greyish-brown. Often strongly streaked with black.
Sapwood: Same as heartwood (not clearly demarcated from the heartwood)

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

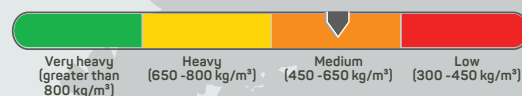


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

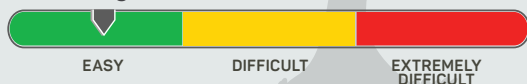


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Decorative Plywood and veneer



Cladding and mouldings



Cabinet work



Furniture



Frames and trims



Interior joinery

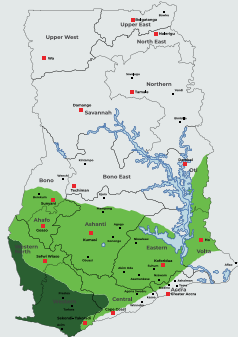


Panelling

OHAA

Scientific name: *Sterculia oblonga*
Local name: Ohaa, Pumpungo / Pulumpung, Akple / Danve / Loloe
Trade name: Ohaa

01 Ecology and Distribution



Mostly found in the Moist Evergreen and Moist Semi-deciduous and dry semi-deciduous forests.

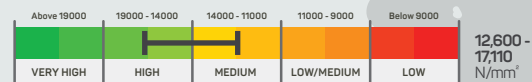
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

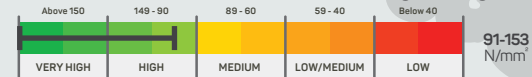
Heartwood: Creamy to Pale-yellowish brown with darker markings
Sapwood: Same as heartwood (not clearly demarcated from the heartwood)

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

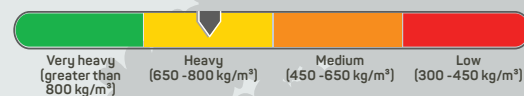


Modulus of Rupture (MoR) - Breaking strength

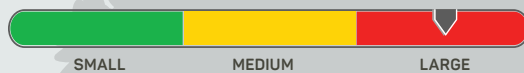


04 Physical Properties

Density



Movement in Service

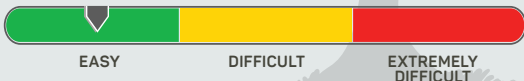


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green
 No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Panelling



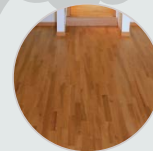
Claddings



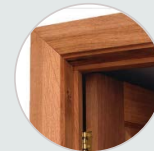
Interior Joinery



Furniture



Domestic flooring



Frames and trims

OKORO

Scientific name: *Albizia zygia*
Local name: Okoro, Kulo / Xeyi, Ziwar
Trade name: Okoro

01 Ecology and Distribution



Occurs mostly in Semideciduous and common in fallow land except the wet evergreen, Savannah and Coastal savannah.

- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

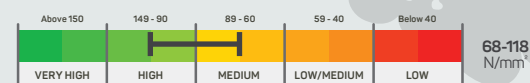
Heartwood: Yellowish-brown, sometimes with dark streaks
Sapwood: Yellowish (very little distinction between sapwood and heartwood)

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

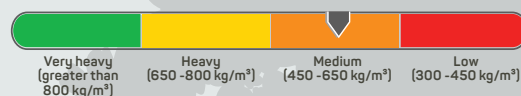


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Ornamental fittings



Cabinet work



Interior and exterior joinery



Furniture



Light flooring



Toys and carvings



Stairs

ONYINA

Scientific name: *Ceiba pentandra*

Local name: *Onyina, Guug/ Gomga/ Gungu/ Gbang / Rimi / Kakre, Vuti / Atepre / Lce / Ofua, Vule, Ehuti.*

Trade name: *Ceiba, Fuma, Formager*

01 Ecology and Distribution



Moist Evergreen and the Deciduous forests, as well as dry forests and common in the secondary forests except savannah and coastal

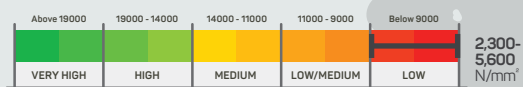
- Moist/Dry Semi-deciduous
- Transitional Zone
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

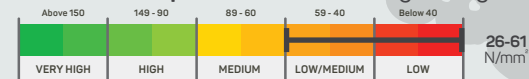
Heartwood: Creamy white, streaked with yellow and grey
Sapwood: Creamy white

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

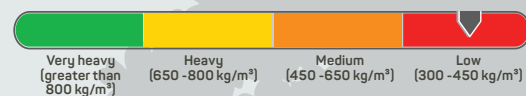


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

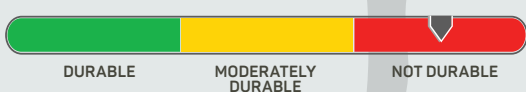


Movement in Service

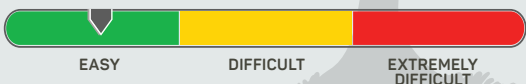


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor
Finishing: Satisfactory (Filler needed)			

08 Uses



Plywood and veneer



Mouldings



Packaging



Furniture



Light construction



Splints

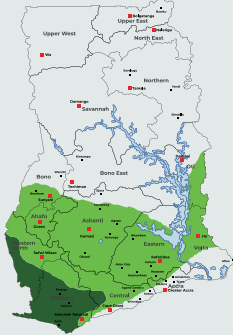


Match boxes

ONYINAKOBEN

Scientific name: *Rhodognaphalon brevicuspe*
Local name: *Onyinakoben*
Trade name: *Kodroti*

01 Ecology and Distribution



Available in Dry and Moist semi-deciduous to evergreen forests of Ghana

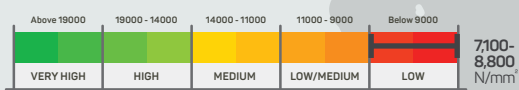
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

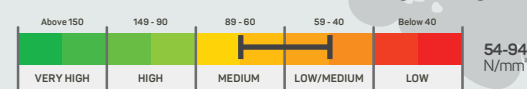
Heartwood: Pinkish to red
Sapwood: White

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

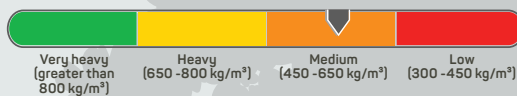


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

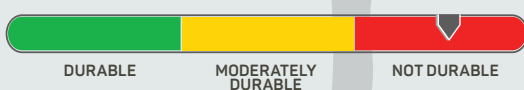


Movement in Service

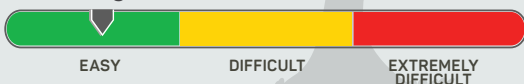


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red
 Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor
Finishing: Satisfactory (Filler needed)			

08 Uses



Plywood and veneer



Pallets



Packaging material



Furniture



Frames and trims



Interior joinery



Panelling

OTIE

Scientific name: *Pycnanthus angolensis*

Local name: *Otie*

Trade name: *Illomba, Otie*

01 Ecology and Distribution



Abundant in the Wet and Moist Evergreen and common in the Moist and Dry Semi-deciduous forests

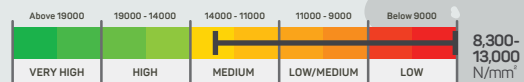
- Moist/Dry Semi-deciduous
- Transitional Zone
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

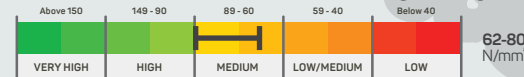
Heartwood: Light-brown to greyish pale red
Sapwood: Light-coloured

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

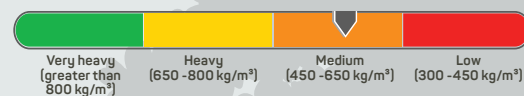


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

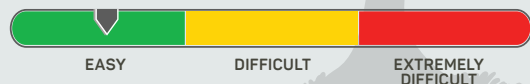


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor
FINISHING: Good (Filler needed)			

08 Uses



Plywood and veneer



Mouldings & claddings



Joinery



Furniture



Boxes

PAPAO

Scientific name: *Azelia africana*
Local name: Papao, Kpikalic/Kpaliga/Kolo Kakala, Wokpa
Trade name: Afzelia, Papao, Doussie, African oak

01 Ecology and Distribution



Mostly found in the Dry Semi-deciduous and fringing forests and the Savanna Woodlands of Ghana.

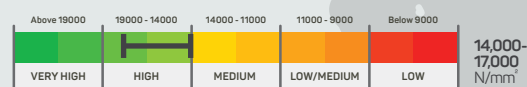
- Savannah
- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

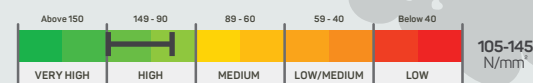
Heartwood: Light brown to dark reddishbrown
Sapwood: Pale-yellow

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

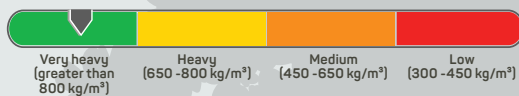


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

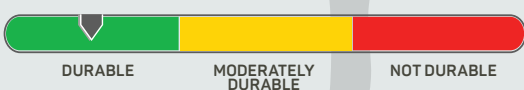


Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Red
 Common, but tend to be over-exploited, restriction and protection needed, level of cut 100-200% of AAC

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING / SCREWING: Quite Difficult (Pre-boring needed)			
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Plywood and veneer



Interior fittings



Joinery



Furniture



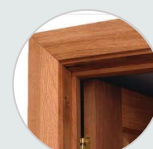
Panelling



Floors



Doors



Frames

POTRODOM

Scientific name: *Erythrophleum ivorense*

Local name: Potrodom, Bupunga / Elagji, Atsa, Etsati

Trade name: Potrodom, Tali

01 Ecology and Distribution



Available in the Evergreen, Deciduous, and Savanna forests. Sparsely distributed in Dry Semi-deciduous forest and Savanna Woodland of Ghana

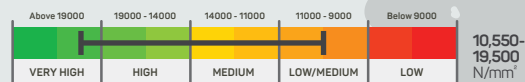
- Savannah
- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

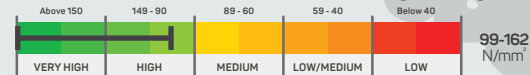
Heartwood: Orangey yellowish brown
Sapwood: Wide band of creamy-yellow

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

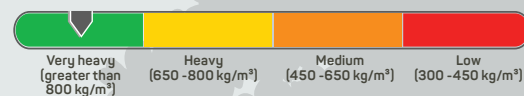


Modulus of Rupture (MoR) - Breaking strength

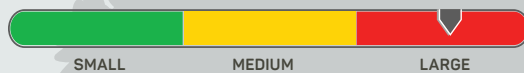


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING / SCREWING: Difficult (Pre-boring needed)			
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Railway sleepers



Heavy flooring



Joinery



Turnery



Construction

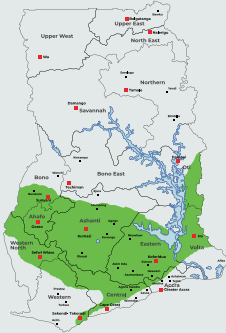


Boat building

SENYA

Scientific name: *Daniellia oliveri*
Local name: Senya, Accra copal, Nyaa/Kacheilo/Maje / Nyoo, Kuyan
Trade name: African copaiba balsam, West African copal tree

01 Ecology and Distribution



Available in the Dry Semi-deciduous forests

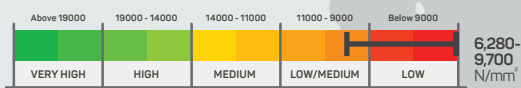
Moist/Dry Semi-deciduous
 Unavailable in these zones

02 Lumber Description

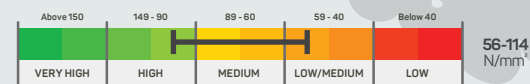
Heartwood: Reddish brown
Sapwood: Reddish brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

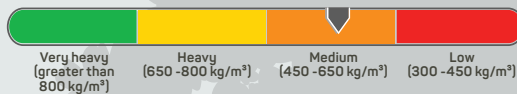


Modulus of Rupture (MoR) - Breaking strength

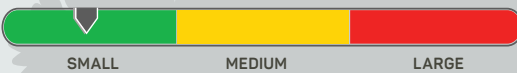


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Pink
 Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Plywood and veneer



Mouldings & claddings



Interior panelling



Furniture



Light carpentry

WATAPUO

Scientific name: *Cola gigantea*
Local name: Watapuo, Uwu
Trade name: Watapuo; Colawood

01 Ecology and Distribution



Found in all the major forest types and in the Savanna woodland except Coastal Savannah

- Moist/Dry Semi-deciduous
- Transitional Zone
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

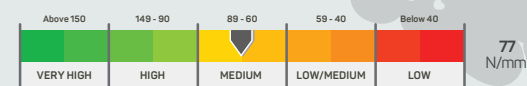
Heartwood: Grey to brownish
Sapwood: Grey to brownish

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

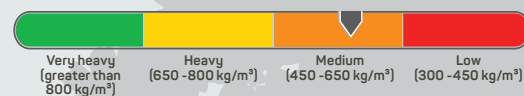


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

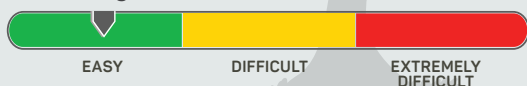


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING / SCREWING: Quite Difficult (Pre-boring needed)			
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor
FINISHING: Satisfactory (Filler needed)			

08 Uses



Boxes



Light construction



Carvings



Furniture



Crates and pallets

WAWABIMA

Scientific name: *Sterculia rhinopetala*

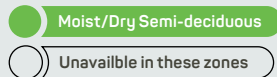
Local name: Wawabima

Trade name: Brown/red Sterculia, Wawabima

01 Ecology and Distribution



Available in the Moist and Dry Semi-deciduous forests of Ghana

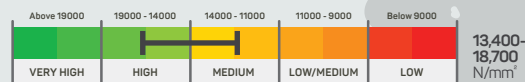


02 Lumber Description

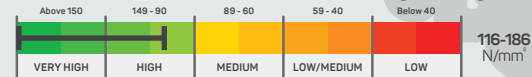
Heartwood: Dark red-brown
Sapwood: Pale red-brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

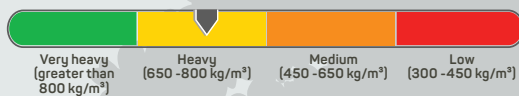


Modulus of Rupture (MoR) - Breaking strength

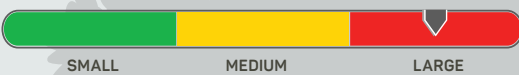


04 Physical Properties

Density



Movement in Service

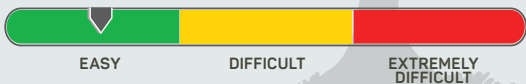


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



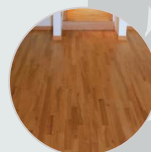
Pink

Common and moderately exploited. Utilizable but not as popular to the trade, present cut is below AAC.

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Flooring



Frames



Doors



Furniture



Tool handles



Stairs

YAYA

Scientific name: *Amphimas pterocarpoides*

Local name: Yaya,

Trade name: Latı, Amphimas

01 Ecology and Distribution



Moderately found in major forest types of Ghana, especially the moist evergreen forest.

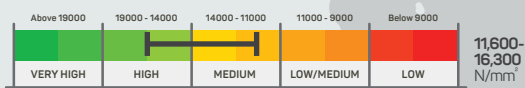
- Moist/Dry Semi-deciduous
- Transitional Zone
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

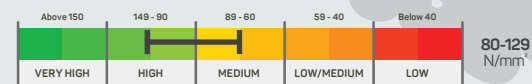
Heartwood: Yellowish brown
Sapwood: Yellow-white to pale brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

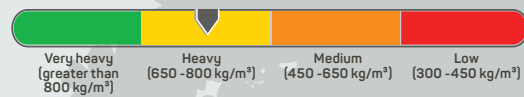


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density

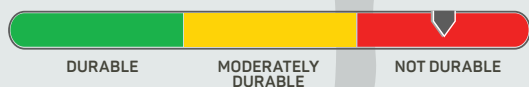


Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Good	Poor

08 Uses



Plywood and veneer



Flooring



Joinery



Furniture



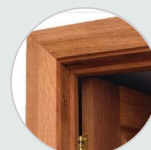
Planks



Frames



Interior construction



Interior trims



Doors



PLANTATION TIMBER SPECIES

This section graphically presents the technical description of (5) plantation timber species.

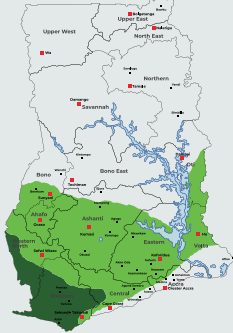
CEDRELA

Scientific name: *Cedrela odorata*

Local name: *Dua-gyeene*

Trade name: *Cedrela, Cedro*

01 Ecology and Distribution



Common in plantations of Ghana at the Moist Semi-deciduous and Wet Evergreen forest zones.

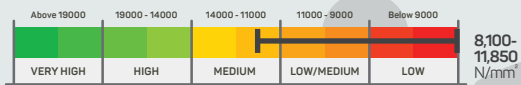
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

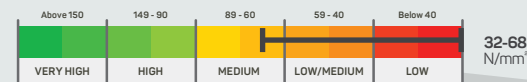
Heartwood: Reddish brown
Sapwood: Paler

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

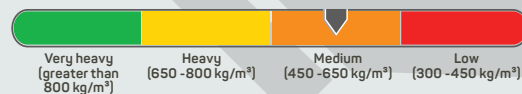


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Plywood and veneer



Mouldings & claddings



Joinery



Furniture



musical instruments



Interior Fittings Frames



Boxes



Carvings



Boat Building

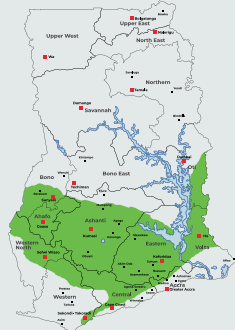
EUCALYPTUS

Scientific name: *Eucalyptus spp.*

Local name: *Eucalyptus*

Trade name: *Eucalyptus*

01 Ecology and Distribution



Found in plantations of Ghana at the Moist semi-deciduous forest zone

- Moist/Dry Semi-deciduous
- Unavailable in these zones

02 Lumber Description

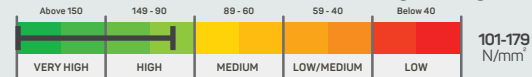
Heartwood: Pale pinkish-brown
Sapwood: Pale pinkish-brown

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

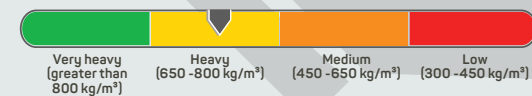


Modulus of Rupture (MoR) - Breaking strength

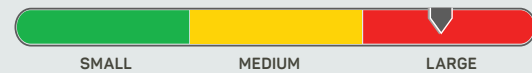


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
EASE OF NAILING / SCREWING: Quite Difficult (Pre-boring needed)			
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Plywood and veneer



ship-building



Joinery



Agricultural implements



Mine props



Particle board



musical instruments



handles



vehicle bodies

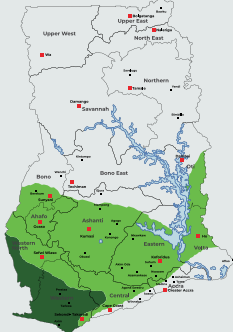
GMELINA

Scientific name: *Gmelina arborea*

Local name: *Gmelina*

Trade name: *Gmelina*

01 Ecology and Distribution



Available in plantations at the Moist Evergreen and Moist semi-deciduous forest zones of Ghana.

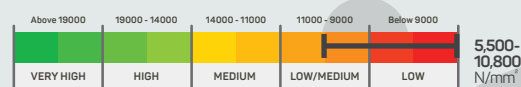
- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

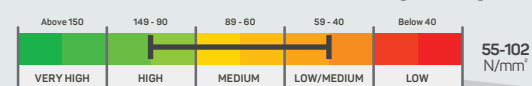
Heartwood: Creamy white
Sapwood: Creamy white

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

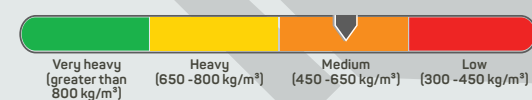


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

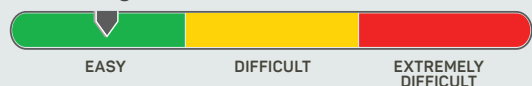


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/ SCREWING)	Easy	Quite Difficult	Difficult
NAILING/ SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Musical instruments



Packaging



Joinery



Furniture



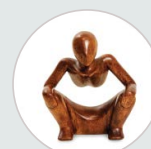
Particle board



Pulp for paper



Pallets and crates



Carvings

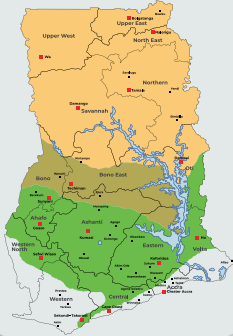


light flooring

TEAK

Scientific name: *Tectona grandis*
 Local name: *Teak*
 Trade name: *Teak*

01 Ecology and Distribution



Found mostly in the Moist semi-deciduous, Dry semi-deciduous, Wet Evergreen and Savannah forest zones of Ghana.

- Savannah
- Moist/Dry Semi-deciduous
- Transitional Zone
- Unavailable in these zones

02 Lumber Description

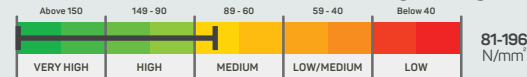
Heartwood: Golden brown and sometimes with darker markings
Sapwood: Whitish

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

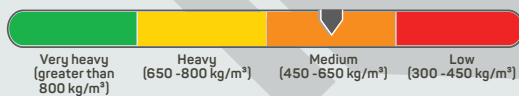


Modulus of Rupture (MoR) - Breaking strength

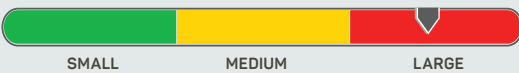


04 Physical Properties

Density



Movement in Service



05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green
 No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



Doors



Staircases



Railway sleepers



Utensils



Cabinets



Furniture



Joinery



Parquet flooring

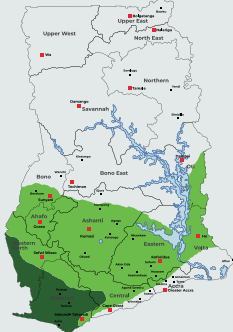


Utility cross arm

YORKE

Scientific name: *Broussonetia papyrifera*
Local name: Yorke, Wauke
Trade name: Paper mulberry, deer's tree, tapa cloth tree

01 Ecology and Distribution



Common in Evergreen and Moist forests of Ghana but occurs lesser in the Semi-deciduous forests.

- Moist/Dry Semi-deciduous
- Evergreen - wet/moist/upland
- Unavailable in these zones

02 Lumber Description

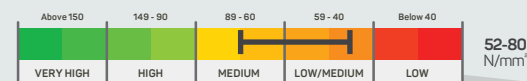
Heartwood: Reddish brown
Sapwood: Whitish

03 Strength Properties

Modulus of Elasticity (MoE) - Flexibility

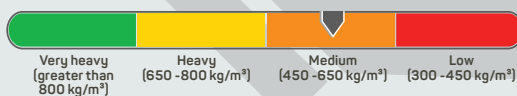


Modulus of Rupture (MoR) - Breaking strength



04 Physical Properties

Density



Movement in Service

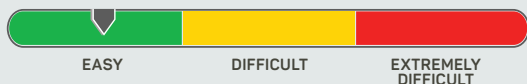


05 Durability Properties

Durability



Treatability



06 Forest Status / Star Rating



Green

No particular conservation concern. Widely available, not threatened

07 Sawing & Working Properties

SAWING	Easy	Quite Difficult	Difficult
MACHINING	Excellent	Good	Poor
MACHINING: Works well with hand and machine tools			
GLUING	Good	Satisfactory	Poor
EASE OF (NAILING/SCREWING)	Easy	Quite Difficult	Difficult
NAILING/SCREWING (HOLDING ABILITY)	Good	Satisfactory	Poor
FINISHING	Good	Satisfactory	Poor

08 Uses



boxes



light construction



Joinery



Furniture



cabinet



Picture frames



Pallets and crates



Carvings



Pulp for paper



CONCLUDING NOTES

The physical and technical properties of lesser-known and lesser-used timber species are not readily known even though they tend to be widely used. The gradual shortage and consequent increase in prices of wood from commonly known timber species on the Ghanaian market have presented further opportunities for end-users to be made aware of other wood options, comparable in quality and available for use. This compendium offers a more visual and graphical approach to understanding the physical and technical properties of Ghanaian timber species, particularly the lesser used and lesser-known species. Disseminating technical information in this manner will facilitate effective knowledge uptake and application by wood users.

Even though this resource was primarily developed with the high volume timber consumers (HVTCs) in mind, its content and usage are relevant for all actors along the timber value chain, as well as academia. The book is useful for creating awareness, promoting the use of LUS and LKS as fit-for-purpose alternatives for wood and wood products, as well as expanding and diversifying market interest away from the commonly known or used and sometimes over-exploited timber species in Ghana. This compendium was produced by KWC with funds from partners including the Foreign Commonwealth and Development Office (FCDO) of UK, under the project “Building Capacities of Small-Medium Forest Enterprises to produce and Trade in legal timber in Ghana and Liberia – Phases II and III”.





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