



Diversification of timber harvests is vital for sustainable forest management

In the Congo Basin rainforest hundreds of timber species grow. However, only a few are used for commercial purposes. Overexploitation of these species may cause them to slowly disappear. There are plenty of species which can replace current commercial species in a myriad of applications. These are the so-called lesser known timber species.

by Frank Luijckx

The sustainable management of forests is crucial for preserving the Congo Basin rainforests. To ensure that sustainable forest management (SFM) can continue well into the future, it is essential to diversify timber harvests. In central Africa a few species are harvested disproportionately, diminishing their abundance in the forests and threatening their existence. Sapelli, or African mahogany, is listed as “endangered” on the IUCN Red List, due to overexploitation. Azobé is another example of an overexploited species. It is currently listed as “vulnerable” on the IUCN Red List. To protect these species, it is vital to diversify timber harvests through the inclusion of lesser known timber species (LKTS). By doing so, the pressure on current commercial species will be reduced. Diversification is vital for forest health. The enormous biodiversity in tropical rainforest heavily leans on the biodiversity of trees. If tree species are lost, animals that are dependent on that species for food or shelter will follow

suit. This has cascading effects on the whole ecological web of the forest. Therefore, it is vital to retain this biodiversity. Biodiverse areas are generally also more resilient to disturbances as their complexity gives them great adaptive abilities. This is very important in the face of climate change. Harvest diversification helps safeguard:

- Commercial species
- Forest diversity
- Species dependent on commercial tree species
- Forest resilience

Many lesser known timber species have properties exceeding those of current “generalist” commercial species.

As such, harvest diversification is vital for the long-term success of SFM. FSC is committed to diversification of timber harvests and is working on promoting the use of LKTS from the Congo Basin.

CRITERIA FOR LKTS TO BE BROUGHT TO THE MARKET To select new LKTS species, it is vital to do research into their usability. Before any species can enter the market, several criteria need to be evaluated:

- Timber availability
- Technical specifications
- Applicability

Timber availability For a species to be interesting for the market, it is vital that this species is both temporally and spatially widely available in the forest concessions. This guarantees sustained and continuous supplies.

Technical specifications For many of the LKTS species, technical specifications have been investigated by CIRAD. They have publicly available datasheets with crucial technical information.

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Frank Luijckx is a young professional in ecology and environmental sustainability. His interest lies in increasing the sustainability of interactions between humans and the natural environment. In the period between January and July 2020 he made an inventory of lesser known tree species in the Congo Basin, assigned by FSC The Netherlands.



Kosipo timber frames. Produced at the FSC-certified forest concession of IFO in the Republic of Congo.

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FSC wants to support initiatives which promote the use of LKTS timber.

Alternatives for current commercial species listed here are applications ranging from indoor to outdoor and from decorative to constructions works. They can be checked in CIRAD datasheets and at the Lesser Known Timber Species site. Availability is always in exploitable volume over the next ten years, and is spread over all FSC-certified concessions in the Congo Basin.

These species are only a small sample of the variety that Congo Basin forests have to offer. Using underutilized species for products is a great method of showing a companies' commitment to sustainability. Due to the great variety in aesthetics between species, products made from underutilized species exhibit a unique character. More information on each of the species can be found on the Lesser Known Timber Species website.

FSC SUPPORTS THE USE OF LKTS TIMBER FROM THE CONGO BASIN

All in all, there are enough reasons to utilize the full diversity of the forest. LKTS timber is not only well suited to give products a unique character, it also allows the forest to be managed better. Recognising the importance of diversifying timber species, FSC wants to support initiatives which promote the use of LKTS timber.

Key information is:

- Appearance of timber (Colour, grain)
- Durability (Resistance to water, fungi and termites)
- Mechanical properties (Stress-resistance, elasticity)
- Physical properties (Density, hardness, stability)
- Processing characteristics (Treatability)
- Drying behaviour (Drying rates, risks of deformation, potential drying schedules)
- Machining and assembly information (Blunting effects, sawing tools, assembly recommendations)

APPLICABILITY Based on the technical specifications, CIRAD also advices on end uses. These greatly depend on the appearance, physical and mechanical properties and durability of the timber. Besides the technical possibilities of a species of LKTS, market and customer knowledge are also vital in convincing clients to adopt new LKTS species.

AVAILABILITY OF FSC-CERTIFIED LKTS TIMBER Timber from underutilized species is by no means inferior to current commercial species. Depending on the application, many lesser known timber species have properties exceeding those of current “generalist” commercial species. This is because of the versatility that a greater diversity of species can offer. Together with the concessionaires, FSC inventoried the short- to mid-term abundance of LKTS in FSC-certified concessions in the Congo Basin in 2020. The mid-term availability was examined and exploitable volumes were estimated for a ten year time frame. The following data are as such the combined total exploitable volumes per species of all FSC-certified concessions in the Congo basin and potential harvests will be spread over the next ten years. After the given ten-year time frame, stocks and availability may and will change as concessionaires move their activities to other parts of their concessions.

MORE INFORMATION

For more information regarding LKTS species in the Congo Basin and their possibilities, you can contact:

- Supply LKTS Congo Basin:
Nathalie Bouville, FSC Africa, n.bouville@fsc.org
- International markets LKTS:
Ben Romein, FSC The Netherlands, b.romein@fsc.nl

Sources

1. IUCN Red list (<https://www.iucnredlist.org/>)
2. CIRAD (<https://tropix.cirad.fr/fiches-disponibles>)
3. Lesser Known Timber Species (<https://www.lesserknowntimberspecies.com/>)

LKTS MAINLY SUITED FOR INTERIOR APPLICATIONS

Fraké

Technical specifications: Limited durability and strength
Applications: Veneers, panelling, fibre boards, boxes and crates
Availability: 2.97 million m³
Replacement for: Okoumé, Ayous

Ilomba

Technical specifications: Limited durability
Applications: Veneers, panelling, joinery and boxes and crates
Availability: 2.35 million m³
Replacement for: Okoumé, Ayous

Beli

Technical specifications: Distinctive look, relatively strong
Applications: High class cabinetwork and furniture, veneer, flooring, inside stairs and house frames
Availability: 902 thousand m³
Replacement for: Sapelli, Ayous in decorative applications, Tali and Azobé in construction work
General comment: Also known as Awoura or zebra wood because of its black and white striped pattern

Kosipo

Technical specifications: Red brown with demarcated sapwoods, relatively durable
Applications: High class furniture, flooring, stairs, light carpentry
Availability: 751 thousand m³
Replacement for: Sapelli, Ayous

Essia

Technical specifications: Soft, red timber
Applications: Decorative veneers
Availability: 576 thousand m³
Replacement for: Sapelli

Aielé

Technical specifications: Soft, limited durability
Applications: Veneer and plywood
Availability: 532 thousand m³
Replacement for: Okoumé

LKTS MAINLY SUITED FOR EXTERIOR APPLICATIONS

Dabéma

Technical specifications: Strong and durable
Applications: Heavy carpentry, house frames, vehicle and container flooring, stairs, industrial flooring, heavy furniture
Availability: 1.25 million m³
Replacement for: Azobé, Tali

Eveuss

Technical specifications: Exceptionally strong and durable
Applications: Hydraulic works, bridges, heavy carpentry, industrial or heavy flooring
Availability: 1.10 million m³
Replacement for: Azobé, Tali
General comment: Its high durability makes it well suited for applications in contact with water

Diania

Technical specifications: Strong, limited durability to fungi or termites
Applications: Heavy carpentry, vehicle or container flooring, furniture, stairs, flooring, sliced veneer
Availability: 863 thousand m³
Replacement for: Ayous, Azobé, Tali
General comment: Also known as Celtis Tessmani, has both interior and exterior applications

Omvong

Technical specifications: Strong and durable
Applications: Heavy construction, bridges, decking, fresh water hydraulic works, sleepers
Availability: 735 thousand m³
Replacement for: Azobé, Tali
General comment: Also known as Eyoum, can be used in applications in contact with water

Limbali

Technical specifications: Relatively strong and durable
Applications: Heavy carpentry, ship building, flooring, joinery
Availability: 637 thousand m³
Replacement for: Azobé, Tali
General comment: Used for the terrace of a school in Denmark

Alep

Technical specifications: Strong, durable, useable in marine environments
Applications: Hydraulic works, bridges, heavy carpentry, sleepers
Availability: 626 thousand m³
Replacement for: Azobé, Tali