

Second life for oil palm trunks: Fueling the future of sustainable materials

The use of felled trunks for core materials signals a shift toward repurposing an otherwise underutilised resource certified by the MSPO agency.

The palm oil industry, despite being the most productive vegetable oil crop per hectare compared to the soybean or sunflower, continues to face unwarranted criticisms for its environmental costs. In recent years, it has responded with more resource-conscious practices aimed at reducing its footprint.

Among the most notable developments is the use of oil palm trunks (OPTs), once considered waste, as a raw material for palm core products. This approach reuses plantation waste and marks a shift in how resources are managed across the sector.

OLD TRUNKS, NEW ROLE

OPTs have long been treated as agricultural waste, typically left to decompose after plantations were cleared for replanting, contributing to material loss and emissions.

Today, these trunks are taking up a new role; as they are being converted into palm core materials, providing an alternative for conventional wood in applications ranging from joinery, door and furniture manufacturing.

This development addresses the broader challenge of balancing growth, food security, and environmental sustainability. With the global population expected to reach 9.7 billion by 2050, the need for more sustainable materials is set to rise.



The unloading of OPTs

Repurposing OPTs eases demand on natural forests, reduces carbon emissions, and supports circular practices within the palm oil industry.

RETHINKING PALM WASTE AS A SUSTAINABLE SOLUTION

As deforestation and biodiversity loss continue to pose serious environmental challenges, finding ways to separate economic growth from ecological harm has become increasingly crucial.

The production of palm core materials from OPTs presents one way to do so, reducing the need for new plantation lands while addressing waste and emissions.

Benefits of using palm core materials include:

- **Minimises waste:** Converting discarded trunks into raw material limits environmental impact.
- **Lower emissions:** Processing OPTs requires less energy than traditional timber.
- **Reduces forest dependence:** Provides a substitute for materials commonly sourced from logged forests.
- **Supports rural livelihoods:** Plantation operators and smallholders gain a new revenue stream from material that would otherwise be left unused.

OPTIMISING PALM CORE PRODUCTION METHODS

Palm core materials are being processed with more efficient techniques, including low-energy drying, resin infusion, and biodegradable adhesives, which improve both durability and performance. Research into fire- and water-resistant treatments is also underway, making these materials more comparable to conventional options.

Geo-spatial monitoring, artificial intelligence, and automated systems are further optimising the process. These digital tools help ensure that all parts of the OPTs are used effectively, reducing waste and supporting sustainable production practices.

ALIGNING WITH GLOBAL SUSTAINABILITY STANDARDS

For palm core materials to be recognised as a responsible alternative, traceability and certification are essential.

Technologies such as blockchain-enabled tracking can help verify the source of materials and ensure they come from managed plantations.

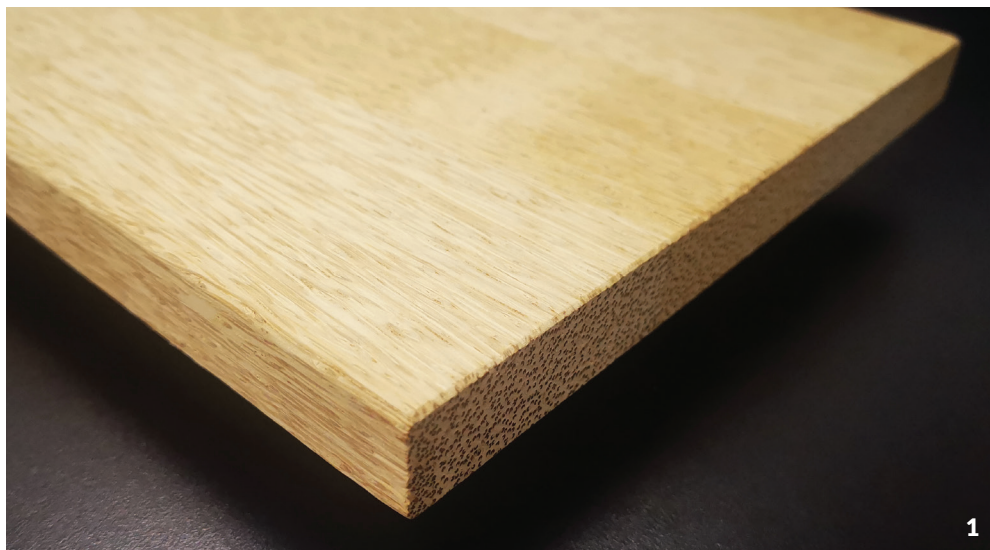
Certification through MSPO provides structured benchmarks for environmental and social practices within the supply chain.

GOING FORWARD: COLLABORATING FOR GROWTH

Scaling the adoption of palm core materials will require strong collaboration between governments, research institutions, and businesses.

Expanding research on material properties will drive further improvements, while market incentives can foster demand for sustainable options.

Raising consumer awareness and integrating smallholders into sustainable supply chains will also



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support long-term growth in this market.

A NEW ERA FOR TIMBER: INTEGRATING PALM CORE MATERIALS

The timber industry is facing a pivotal moment; by incorporating sustainably sourced palm materials, it can redefine its role in global sustainability efforts.

Palm core materials provide more than just a waste solution, they signal the industry's growing commitment to sustainability.

As the world transitions to a circular economy, OPTs delivers a sustainable solution that benefits businesses, the environment, and the communities that depend on this vital crop. **P**



Inspiring the next "material revolution" by creating sustainable and high-performance materials from oil palm waste, **Peter Fitch**, together with IOI, have set up IOI Palm Wood to commercialise this untapped potential.

LEGEND

- 1 IOI Palm Wood's OnCore lumber core from palm wood
- 2 Blockboard with wood veneer made from palm wood

Images courtesy of IOI Palm Wood.