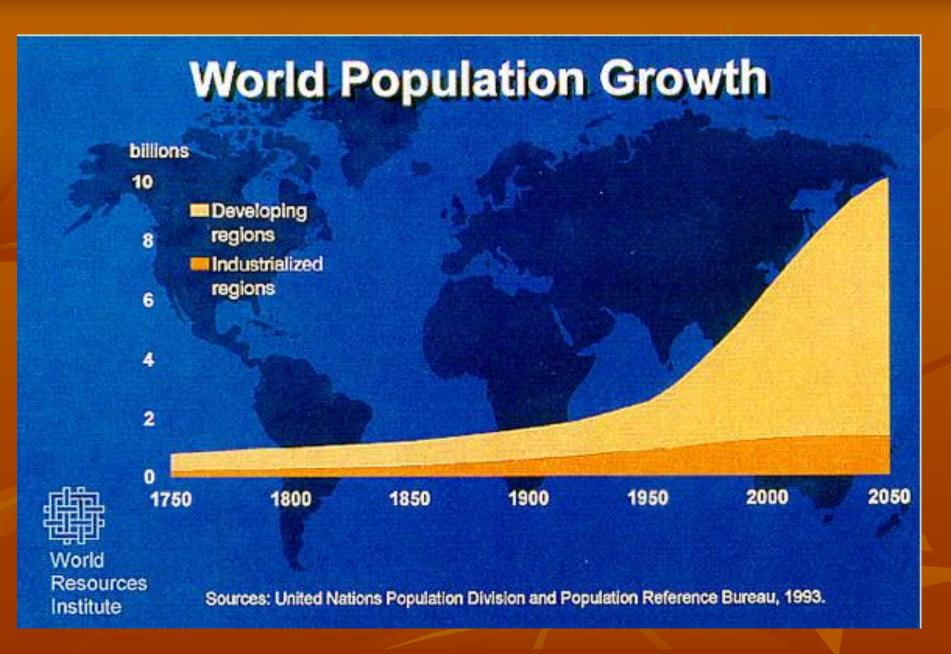


The Age of Wood: Science and Sustainability

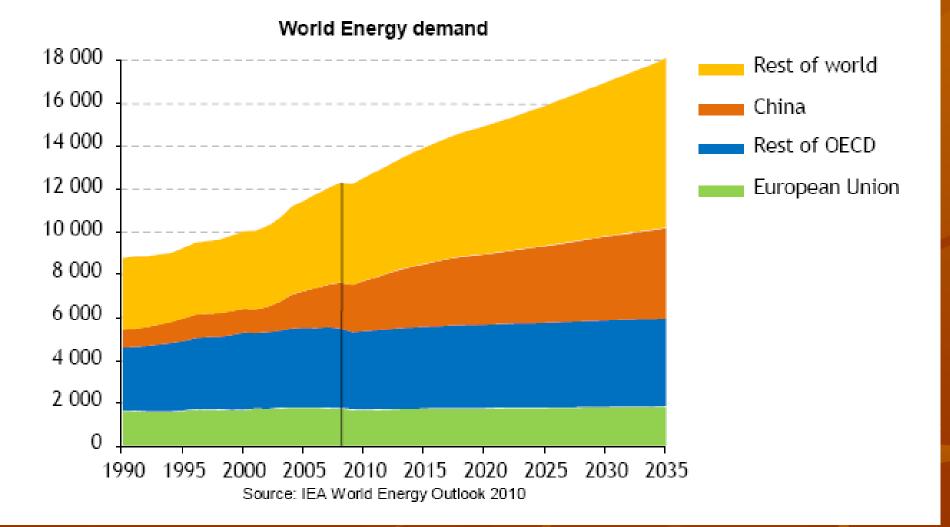
Mike Snow, Executive Director American Hardwood Export Council (AHEC)



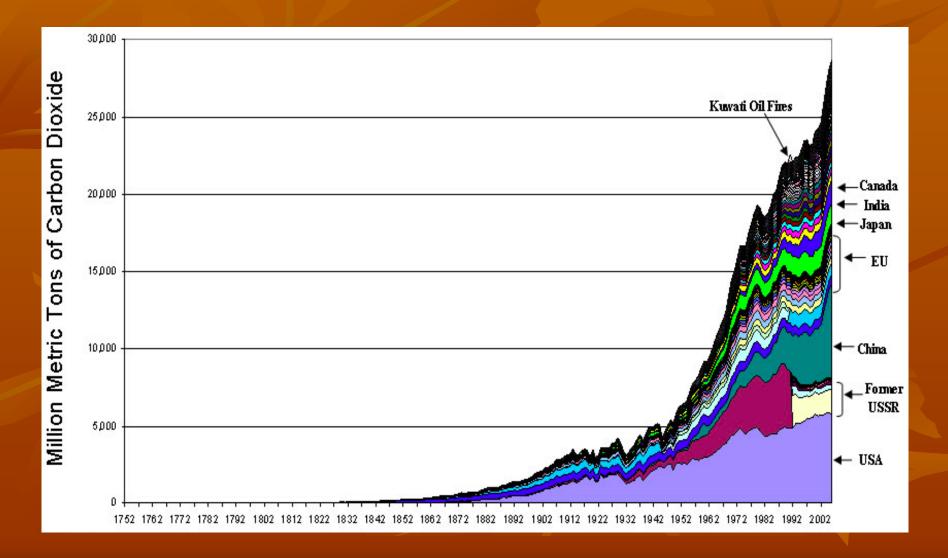
"Middle Class" *Outside the U.S.* Expected to Double By 2020 – Approaching 1 Billion Households Worldwide commodity consumption will be impacted

Foreign households w/real PPP incomes greater than \$20,000 a year (in millions of households) 1000 800 Middle class in developing countries projected to increase 138% by 2020 vs. just 15% in developed countries in 2009 600 400 Developing countries 200 Developed countries (ex US) \mathbf{O} 1990 1994 1998 2002 2006 2010 2014 2018

World Energy Demand

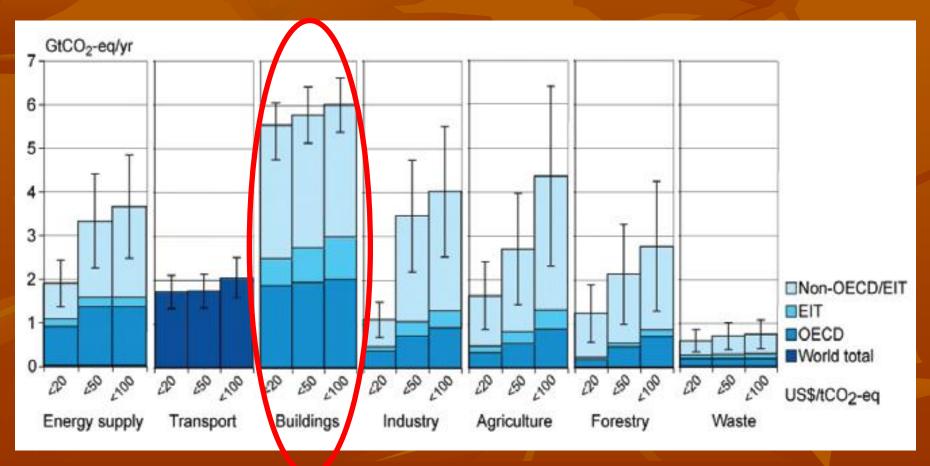


Global CO2 Emissions



The role of green building

Estimated greenhouse gas mitigation potential by sector and region using technologies and practices expected to be available in 2030.



Source: Intergovernmental Panel on Climate Change's 4th Assessment Report (IPCC AR-4)

Green Building Rating Systems:



CASBEE 建築物総合環境性能評価システム

Comprehensive Assessment System for Building Environmental Efficiency



BRINGING GREEN TO THE MAINSTREAM





LEED: A Step in the Right Direction



 Increased Reliance on LCA
 "Responsible Extraction" credit highlights uneven treatment of wood/other extractive industries

Architects Journal March 2013

LEED outstrips BREEAM across the globe – including Europe

New research by the AJ shows the LEED sustainable building certification system dominates everywhere except in the UK

SUSTAINABILITY LEED is now the dominant green building standard in emerging markets and Europe, with BREEAM leading only in the UK.

New research by the AJ has found only one project going through BREEAM certification in China, while LEED, the sustainable building certification system developed by the US Green Building Council, has already certified 534 schemes there and has another 533 in the system. BREEAM has so far failed altogether in India and Brazil, whereas LEED has certified 142 schemes and is looking at another 232 in India. LEED has nearly 700 projects or potential schemes on its books in Brazil. In Europe LEED has 1,350 projects on its books, compared with BREEAM's 646.

'BREEAM is the principal measure of sustainability in buildings in the UK and is embedded in regulations, but everywhere else in the world LEED wins outright,' said Nigel Ostime, director of whiteroom architecture. BREEAM's record in the UK is the most impressive, with 2,365 projects certified or in process, compared with 134 LEED buildings, 99 of which are currently in process, suggesting the certification may be gaining ground.

'BREEAM is thoroughly established in the UK but in due course market pressures may lead to a switch to LEED,' concluded Ostime.

In the Middle East the battle already appears to have been lost. BREEAM Gulf, launched in 2009 to certify projects in the UAE, Oman, Qatar, Bahrain, Saudi Arabia, and Kuwait, was abandoned after two years. But LEED has already certified 75 projects in the region and has more than 1,075 in the pipeline.

Richard Smith of Atkins added: In the Middle East decision-makers often have a US education. This results in them gravitating towards the American LEED system.' He also blamed the failure of BREEAM on 'marketing', adding: 'LEED was marketed very well in the Middle East. They offered training for practices, so staff became very clued-up in the system.'

A leading industry professional added: 'BRE was privatised some years ago and has since been criticised for charging significant fees for one-off assessments, when more standardisation was possible.' *Laura Mark*



We may run out of wood but not

Well at least not for the next 200 years

Century Extrusions Ltd (CEL) commenced commerc operations in April 1991. The Company has extrusion manufacturi facility spread over an area of 7.31 Acres at Kharagpur (West Benga India, with an installed capacity of 15000 M.T. per annu

THE COMPANY

The company has three extrusion lines with presses of capaciti 2700 M.T. & 1620 M.T. (UBE, Japan) and 1250 M.T. (Indigenous) cater to a very large range of extrusions. These presses are capable producing extrusions in alloys ranging from **1**xxx to **7**xxx series

The Company has complete in-house facilities f Die manufacturing and for Heat Treatment of Dies. Remelt Sho for manufacture of Billets besides the facilities for Extrusio and Quality Assurance.

PRODUCT RANGE

CEL .

G

The Company manufactures and supplies extrusions for vario applications, such as Architecture, Road Transport Vehicles, Railway Electrical & Electronic Applications, Consumer Durables, Irrigatic General Engineering, Defence applications, etc.

The Company has an inventory of more than 6000 Di to manufacture more than 4000 different profiles.

QUALITY ASSURANCE

CEL ° century

CEL .

CENTURY EXTRUSIONS LIMITED 113, Park Street, 'N' Block, 2nd Floor, Kolkata-700 016 Tel : +91 33 2229 1012/1291 Fax : +91 33 2249 5656 Email : marketing@centuryextrusions.com Regional offices : Bengaluru • Chennai • Delhi • Kolkata • Mumbai Website : www.centuryextrusions.com

CEL ° century

The Company has an excellent Quality Management System The Plant has been accredited with ISO-9001:2008 for its quality system by DNV, The Netherlands.

The Company usually supplies extrusions as per the toleranc prescribed by the Bureau of Indian Standards (BIS). The Company well equipped to supply extrusions as per the tolerances specified other similar standards such as BS, DIN & others and also as p customers' specifications, by mutual agreement.

MARKET NETWORK

The Company has market presence all over India with its Marketin Offices in North, South, East & West Regions.



Bauxite "sludge" in Hungary 2010



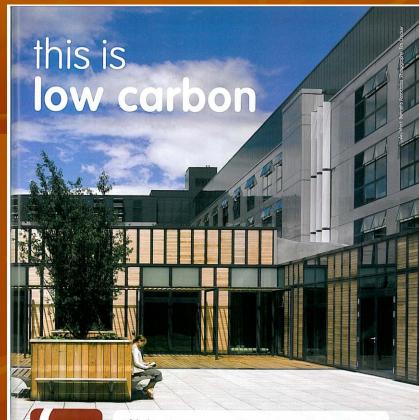
SAY NO TO WOOD. Say yes to Kalingastone.



AND, DO YOUR BIT TO CONSERVE NATURE.

Use of wood leads to deforestation and massive destruction of nature. Use our engineered stone and show your commitment to conservation of nature. Our engineered marble and quartz collection is maintenance free and long lasting, and thus has become the preference of architects and interior designers globally, rapidly becoming an identity for CMC in India. Get high quality engineered stone from Kalingastone.

"Low Carbon" Concrete.....



This is concrete

It was calculated that the construction approach used for Hampshire County Council decreased the carbon emissions associated with the concrete frame by an incredible 33%. This is worth talking about.

((mpa

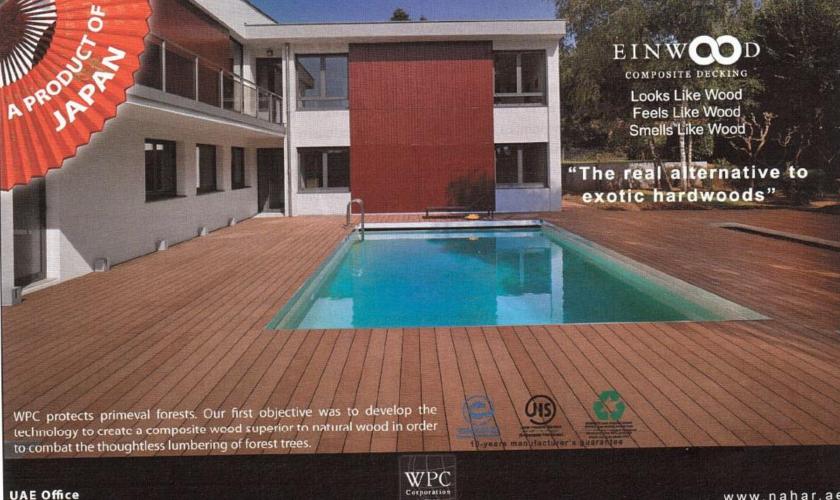
Want to know more? Join the discussion at thisisconcrete.co.uk

This is Concrete is supported by The Concrete Centre

this is concrete

UK Concrete Centre – "This is low carbon: this is concrete"

- "It was calculated that the construction approach used for Hampshire County Council decreased the carbon emissions associated with the timber frame by an incredible 33%"
- Website reveals that claimed savings derive mainly from "reusing" the existing concrete frame (which was less than 50 years old) and from recycling concrete from the partial demolition for use as aggregate



Tel: +9714 3408626 Fax: +9714 3408636



www.einwood.com

www.nahar.ae einwood@nahar.ae

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Looks like wood Works like **cemer**

- Doesn't warp or get affected by termite/moisture
- Real wood finishes at unreal prices
- Aesthetically appealing, structurally strong
- Ideal for external and internal applications



Termite Proof





Everest Industries Limited Corporate Office: Genesis A-32 Mohan Co-operative Industrial Estate Mathura Road New Delhi 110 044 India Tel: 011 41731951/52 Zonal Contacts: NORTH: Jatender Bedi - 09560786715; SOUTH: Asit Vidyarthi - 09731397241; EAST: Sudip Dutta - 09748779818; WEST: Bijith Purushothaman - 09987788703; CENTRAL; Milan Kumar Singh - 09752090051 info@everestind.com | www.everestind.com

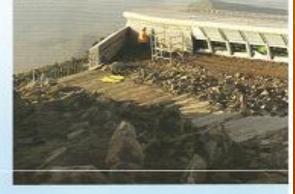
BUILDING SOLUTIONS ROOFING | WALLS | FLOORS | CEILINGS | CLADDING | DOORS | STEEL BUILDINGS

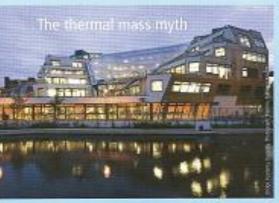
Steel: the ultimate sustainable material

The sustainable qualities of steel are built in to the material. Simply choosing steel as a building material enables specifiers to deliver unrivalled sustainability performance — for life, and for all its subsequent lives. Manufactured from the score associant demonstore party, loss applied on the respected on manufacturelessly without demonstry to 15 parameters. By tagen the daw of the scoredule functions makes a little three parts a long rows, groung as these to complete functions where their word antibilities designs, lotse-start and it is contained factory environment, pro-regressed interf components are defined to share adde for each accessible with the world?

Start can be re-audi reparted without over long its autility of a building rusterial. This utilizes characteristic given all start a high value of all starges of its life cycle. The recovery infrastructure for direct inspat/ing it tophy developed and highly efficient, and has been in plane for decades. Convert recycling and recearchers in the UK are the por cert for shocked developed, and (b) parcent to all start contractions products – figure that the record from for any other construction methods.

Significant evolutionenests damage can be caused at the end of a buildings life when it has to be demoleted and to materials so appeal. Significant buildings, however, do not decay, and are easily adaptate if the configuration of the building result to therein. The during of the to bridge long quark means that their buildings contain large operation spece which are easily eccentry, with parts added or taken easily and its light result and can be adapted, with parts added or taken easily and its light result means that can be caused, with parts added or taken easily and its light result means that can be caused.





Besearch shows that the optimum Boo dhickness required to inchice an effective thermal mask is machy determined by dept knows to machy formers is a common misconception that baldings rough by hermal mass. This repth may provide the hermal mass. This repth may provide a some bocasies baldings such as charates are continting septement. However, the index stocase baldings such as charates are continting septement. However, the index stocase baldings such as charates are continting septement. However, the index stocase that charates stop cool is because they hore very leve windows, which leduces salare gas.

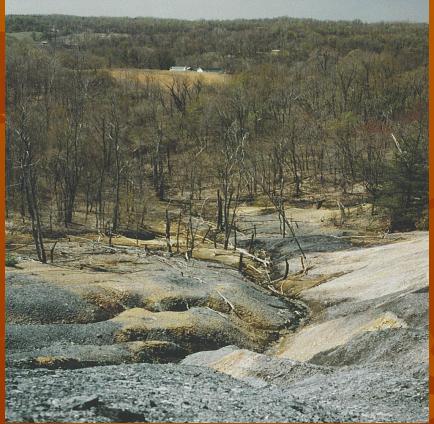
In medani buldings, the gestest accessible mass is faund in the converte floor stats todependent essents has shown that the spirmum Trackness of concrete from slab for providing Thermal mass is 7% tobins. This follows and concrete from slab is includes available in almost all cale-framer baldings, which are prevaily the lightest weight force of internation.

The extra weight associated with heavy, bully concrete harves is not expanded to improve thermal mass and in surplus to suppresents. In fact, the extra mass of hoseyweight concrete components may actually increase the energy required to heavy weights to the building.

For eace information skill reverses concentration contributions

Strip mining for iron ore.....





Additional Research Strengthens our Case!!!

Managed Forests versus "Preserves"

- "Durable" wood products contribute to carbon storage
- "Substitution" effect maximizes carbon mitigation by displacing higher carbonemitting materials
- 1m3 of wood used to substitute for other building materials (steel, aluminium, concrete, plastics) reduces CO2 emissions by an average of 1.1 tonnes

Hardwood Review

Want More Forests? Buy More Wood Products!

USDA Scientist Demonstrates Correlation Industry Knew All Along

reditthe USDA Forest Service for recently becoming more public and proactive in promoting the wood industry. For the second time in three months, agency personnel have extolled the virtues of using more wood. This is a welcome development and another step towards getting a federal endorsement of U.S. hardwood sustainability, which was a key goal identified at the 2010 Hardwood Leaders Forum.

Back on March 30, U.S. Secretary of Agriculture Tom Vilsack announced a newfederal green building policy that included the recognition of a broad range of green building certification standards (not just LEED) and the promotion of wood use in construction. "Our country has the resources, the work force and the innovative spirit to reintroduce wood products into all aspects of the next generation of buildings," he was quoted in a USDA press release, "As we move forward with restoring America's forests, we are getting smarter and more efficient in how we use wood products as both an energy and green building source, which helps maintain rural jobs."

Then, just this month, a Portuguese university published abook on Sustainable Development in the Forest Products Industry. Chapter 2, "Global Sustainable Timber Supply and Demand," was researched and written by Dr. Peter J. Ince, research forester with the USDA's Forest Products Laboratory in Madison, WI (a copy of the chapter can be found at www.treesearch. fs.fed.us/pubs/37326).

Ince's chapter summarizes findings of a 2010 global study correlating the intensity and types of industrial wood use with rates of deforestation. The conclusion? "Industrial timber use has provided timber revenue that has helped make timber supply and demand more sustainable in the leading timber producing regions of the world. Economical industrial timber utilization is avital element in sustaining forests and avoiding large-scale deforestation."

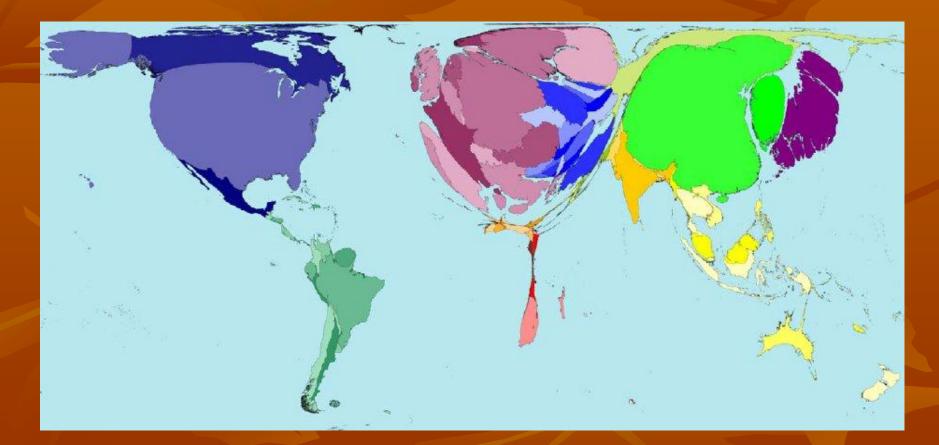
Defeating a Faulty Hypothesis

Ince notes that a common but simple hypothesis is that industrial timber harvesting and forest product demands are correlated with global deforestation. Part of what makes that hypothesis sound reasonable is the public's misunderstanding of the term "deforestation." Harvesting a forest—even by clearcutting—is not deforestation. The clearcut simply turns a mature forest into a regenerating

In This Issue

George Barrett, Editor

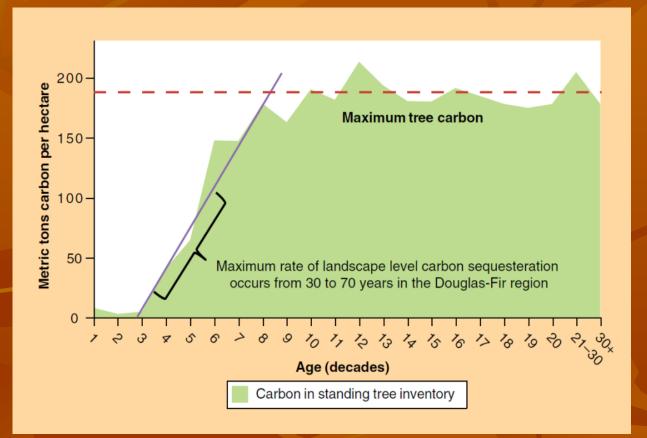
World shaped by wood production: Solid Wood Production= Expanding resource



Source: UNECE Timber Committee and Worldmapper 2009

Impact of forest preservation on carbon storage

 Forest carbon growth rates slow with age
 Little or no increase in carbon storage when the forest reaches maturity.



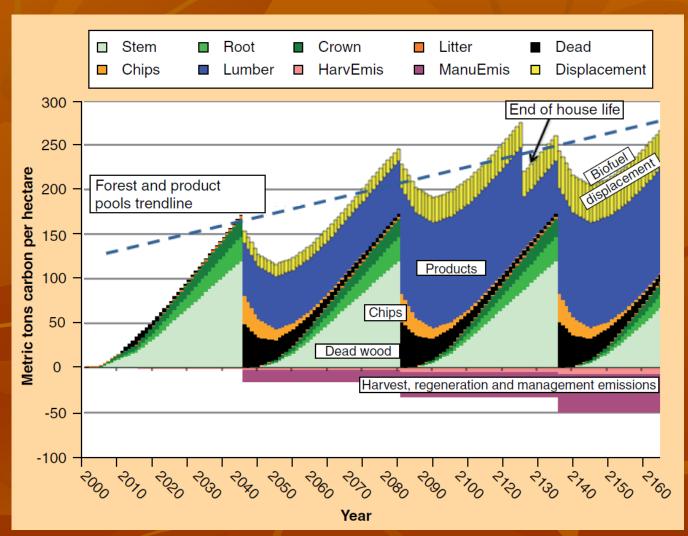
Data relates to Douglas-Fir in Western Washington. Bruce Lippke et al, 2011, drawing on US Forest Service Forest Inventory

The story doesn't end there – only considering GWP at one point in the life cycle – need to consider effect on carbon pools across entire life cycle

Forest plus productcarbon pools and process-energy emissions for a 160 year period (4 forest rotations) in the Pacific North West.

Variables:

- Distribution of carbon in the forest (between stem, root, crown, litter, soil)
- Intensity of harvesting & rate of forest regeneration
- Distribution of carbon between chips and lumber following harvesting
- Length of life in use of lumber products



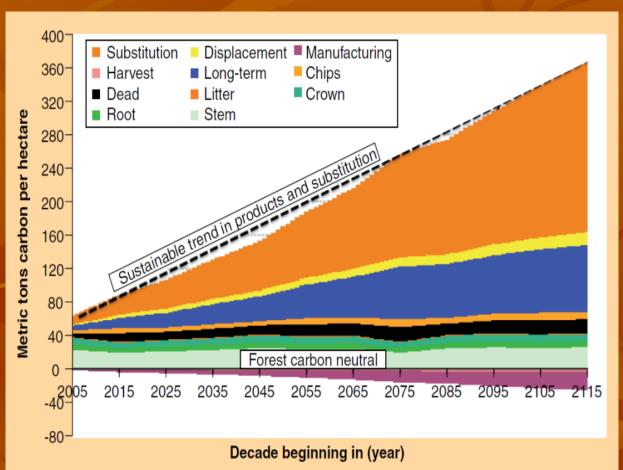
Source:Life cycle impacts of forest management and wood utilization on carbon mitigation: knowns and unknowns, Lippke et al, Carbon Management (2011) 2(3), 303–333

Wood: The Substitution Effect



Impact of sustainable timber harvesting on carbon storage

- Carbon in forest supplemented by progressive increase in carbon stored in long-term forest products
- Carbon storage benefits outweigh (relatively minor) manufacturing emissions
- Most significant benefit due to substitution of more fossil fuel intensive materials (steel concrete)



Data relates to U.S. Inland Northwest state and private forests. Bruce Lippke et al, from Wood Fibre Science 42, 144–164(2010) Metropol Parasol, Seville "World's largest timber structure"

■ 2500 m3 LVL

 GHG emissions to manufacture:
 354 tonnes CO2 equivalent

Carbon stored in the structure:
2000 tons CO2 equivalent





Architects: Jürgen Mayer-Hermann

American hardwoods & EU Timber Regulation

"Prohibition" article

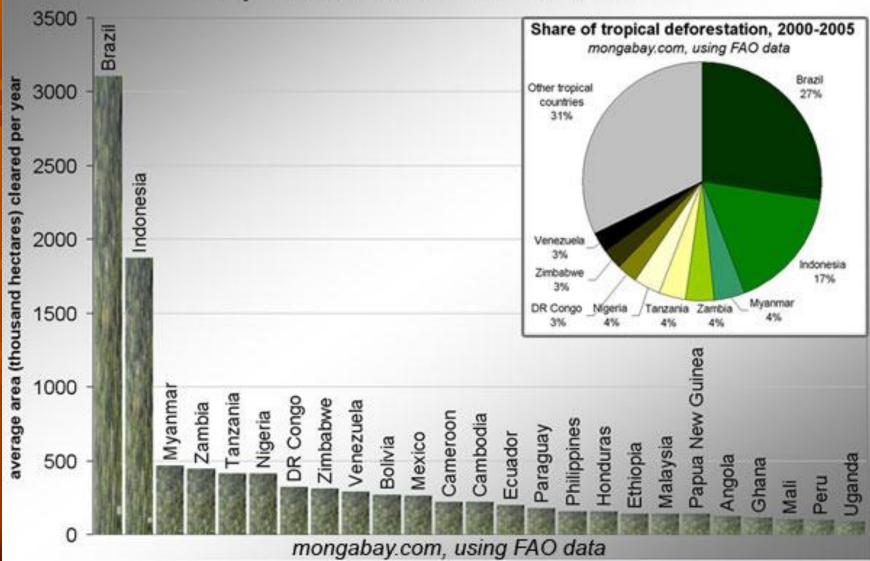
- Places no obligation on operators to positively demonstrate legality as pre-requisite to placing timber on the EU market.
- European authorities must prove timber derives from an illegal source to prosecute under this article of the law.

"Traceability obligation"

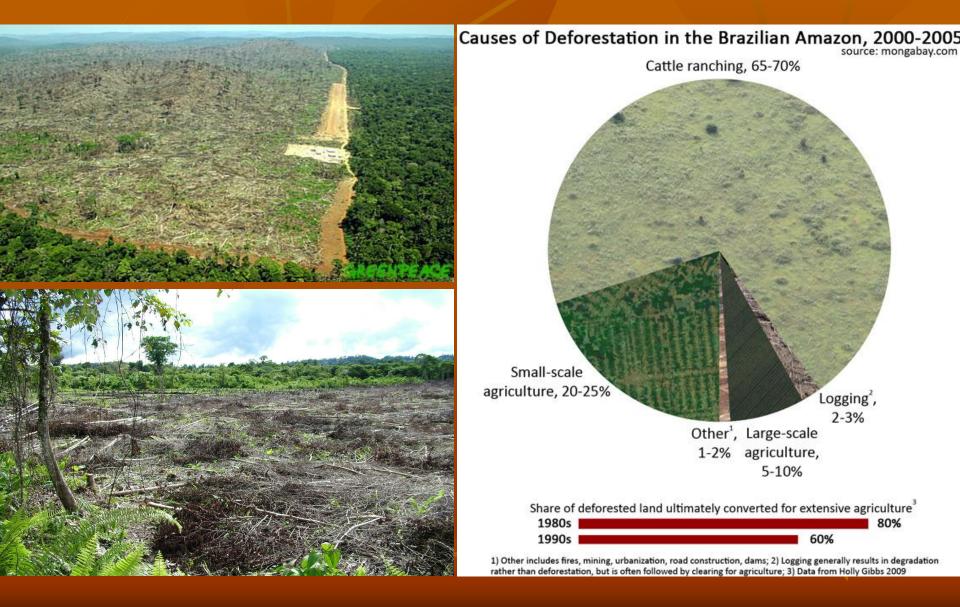
- Applies ONLY to downstream supply chains within the EU
- Does not require importers to impose additional documentation requirements on overseas suppliers.

Forest Problem No. 1: Deforestation

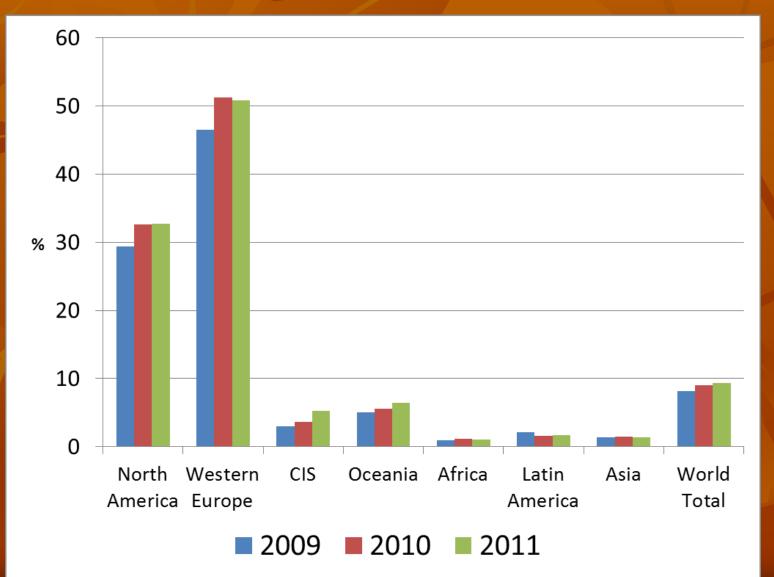
Tropical deforestation rates, 2000-2005



Causes of Tropical Deforestation



Certified forest as % of total forest area, by region 2009-2011



EUTR information and document requirements in relation to US hardwood

| Information that must be accessible to the EU importer | Comment | Examples of information that can be provided by AHEC Members to meet EUTR requirements | Supporting documents and other information to which EU importer should have access |
|---|---|--|---|
| The name and address of the US exporting company | EU importers are not required to seek specific information about the US exporters own suppliers (e.g. names and addresses of hardwood mills or logging contractors) within the US unless the EU importer believes this is necessary to mitigate risk of illegal wood entering the supply chain. | Complete US address e.g.: "A.N. Other Hardwood Inc 5844 South Oak Street Chicago, Illinois 60667 United States" | Commercial invoice Phytosanitary Certificates (for oak, ash, maple, plane, tulipwood, and sweet chestnut) |
| Trade name and type of product | Ideally use both a clear description and reference to the relevant Harmonized System (HS) product customs code. | Examples: • "440791 oak sawn wood" • "440795 ash sawn wood" • "440890 temperate hardwood veneer" ⁵ | Commercial invoice Phytosanitary Certificates (for oak, ash, maple, plane, tulipwood, and sweet chestnut) |
| Common name(s) and, where applicable, the full scientific name(s) of all tree species contained in the product | The scientific name is required in those instances where ambiguity in the common name might create confusion between species in different risk categories. For example the common name "American white oak" should be acceptable – even though this includes several different quercus species – because it can be demonstrated (e.g. using Seneca Creek study) that all is negligible risk. However references just to "oak", "poplar" or "walnut" would not be acceptable as these names include a wide range of species from different regions with varying risk profiles. If the product group contains a mix of species, it is acceptable to list all possible species that might be contained in the product and there is NO requirement to identify the % proportion of each. | Examples: • "American white oak: Quercus alba" • "American red oak: Quercus rubra (northern) and Quercus falcata var.falcata (southern)" • "American tulipwood: Liriodendron tulipifera" | Commercial invoice Phytosanitary Certificates (for oak, ash, maple, plane, tulipwood, and sweet chestnut) A comprehensive list of hardwood species names and other data is available from the US Department for Agriculture at http://plants.usda.gov/java/nameSearch (the user should enter either the commercial or scientific name into the search bar at top left of the page). |
| Quantity traded | Include value and other unit most appropriate to the product group (e.g. cubic meters or board feet for sawn wood and square meters for veneer sheets). | Examples: • "\$72000, 100 m ³ " • "\$17000, 10 MBF" | Commercial invoice Phytosanitary Certificates (for oak, ash, maple, plane, tulipwood, and sweet chestnut) |
| Country of harvest | Typically the United States. However, if a product contains a mixture of US and Canadian wood, AHEC members should estimate and inform their customers of the average percentage of each contained in the product over a 12 month period. AHEC members should provide access to equivalent evidence of a negligible risk of illegal supply in Canada. They may also refer to Lacey Act compliance procedures and provide copies of Lacey import declarations identifying species and Canadian origin. | Examples: • "USA" • "80% USA and 20% Canada by volume" | Commercial invoice Phytosanitary Certificates (for oak, ash, maple, plane, tulipwood, and sweet chestnut) |

⁵ The full list of United States HS custom codes for wood products is available at: <u>http://www.usitc.gov/publications/docs/tata/hts/bychapter/1300C44.pdf</u>. Temperate hardwood codes are 440791 through to 440799 for sawn wood and 440890 for veneer.

| | 1 | | |
|--|--|--|---|
| Sub-national region of | Technically not required for US hardwoods since both the Seneca Creek study and | If the EU importer requests | Data on the geographic distribution of |
| harvest | the FSC Risk Register confirm that all US hardwood producing regions are low risk of | this information, either: (a) | hardwood species in the US is readily |
| | illegal supply. | list the state(s) from which | accessible from the US Forest Service Tree |
| | | each hardwood product is | Atlas: |
| | | sourced (if available) OR (b) | http://www.nrs.fs.fed.us/atlas/tree/tree a |
| | | simply report "hardwood | <u>tlas.html</u> |
| | | producing states of the USA" | |
| Concession of harvest | • Technically not required for US hardwoods since both the Seneca Creek study and | If the EU importer requests | Data on ownership structure of US |
| | the FSC Risk Register confirm that all US hardwood producing regions are low risk of | this information and more | hardwood forest is contained in the Seneca |
| | illegal supply. | specific data is not available, | Creek study Section 2.3, page 27 |
| | According to the Seneca Creek study, there are 9.1 million family forest owners in | report "Multiple private | "Ownership Characteristics". |
| | the US hardwood-producing states, each owning on average fewer than 10 hectares. | forest owners" ⁶ | 31 |
| "Documents or other | • The Seneca Creek study demonstrates that there is less than a 1% risk of any illegal | If the EU importer requests a | Seneca Creek study is available at |
| information indicating | wood entering the U.S. hardwood supply chain and that hardwood of U.S. origin is | summary of this information | http://www.americanhardwood.org/sustai |
| compliance of those | low risk against all 5 Controlled Wood risk categories. | and more specific data is not | nability/sustainable-forestry/seneca-creek- |
| timber and timber | • FSC Global Risk Register concludes that the United States is low risk against all 4 | available, report: "Classified | study/ |
| products with the | FSC Controlled Wood criteria established for legality | Non-Controversial under | FSC Global Risk Register is available at |
| applicable legislation" ⁷ . | | certification guidelines" ⁸ | http://www.globalforestregistry.org/map |

Additional information

Provision of the information recommended in the above table should be sufficient to assure EU customers that they have met their EUTR obligations. However, EU importers are free to draw their own conclusions and AHEC Members are advised wherever possible to provide additional company-specific information to demonstrate low risk of illegal wood origin. Appropriate additional documentation may include, but is not limited to: FSC, SFI or PEFC Chain of Custody certificates, or the SFI Certified Sourcing label; details of FSC audited company controlled wood assessments; other first, second or third party evidence of commitment and implementation of corporate procurement codes such as the AHEC Responsible Purchasing Policy; and samples of standard timber purchase agreements and logging contracts that contain legal compliance clauses.

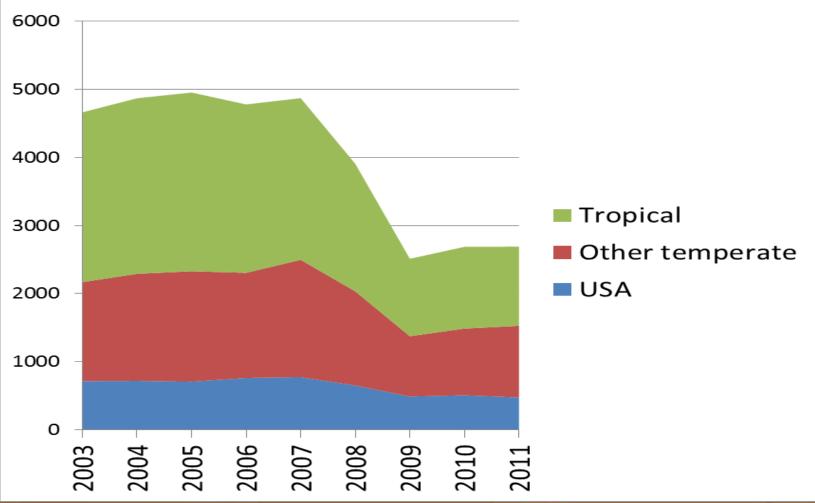


⁶ Use of the phrase "Multiple private forest owners" is recommended in the European Commission's Guidance Document for the EU Timber Regulation – see description of "Concession of harvest" in illustrative tables on pages 25-27 of http://ec.europa.eu/environment/forests/pdf/Final%20Guidance%20document.pdf

⁷ This requirement has been taken out of context and widely misinterpreted as placing an obligation on exporters to provide legality "certificates" or "licenses" as a prerequisite for access to the EU market. It is emphasised that no such obligation exists. This requirement must be read within the overall context of the EUTR and EC guidance. EUTR does not establish any specific requirements for the types of "documents and other information" most appropriate to demonstrate legality. It is only necessary that these are of appropriate quality, credibility and scope to allow the EU importer to establish that a timber product is negligible risk. The EC Guidance document indicates that credible third party studies like the Seneca Creek assessment, and independent sources such as the FSC Risk Register, where these demonstrate negligible risk of illegal logging in specific regions or for specific product groups, are an appropriate form of documentation to meet this requirement.

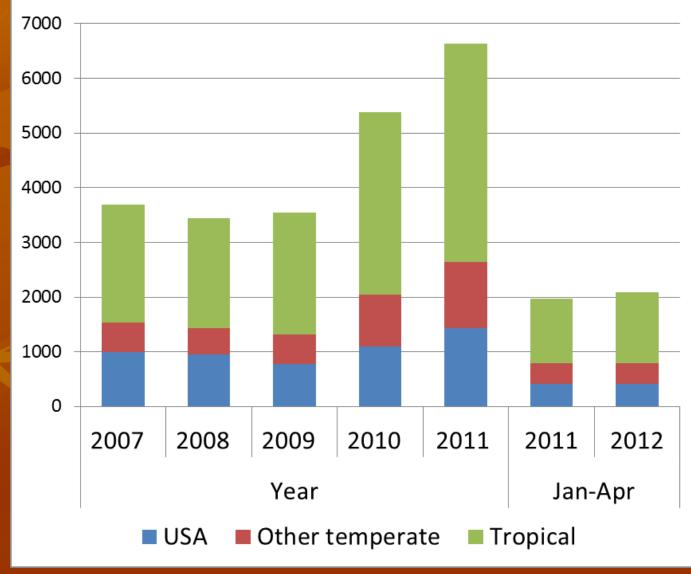
⁸ Use of the phrase "Classified Non-Controversial under certification guidelines" is recommended in the European Commission's Guidance Document for the EU Timber Regulation – see description of "Legality" in illustrative table on page 27 of <u>http://ec.europa.eu/environment/forests/pdf/Final%20Guidance%20document.pdf</u>

EU-25 hardwood lumber imports Volume by supply region (1000 m3)



Source: FII Ltd drawing on BTS Ltd & Eurostat

China hardwood lumber imports Volume by supply region (1000 m3)



Source: Global Trade Atlas

Vietnam's Wood Imports

Mil. US\$

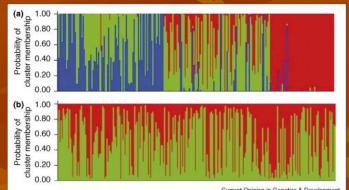


Source: MoIT Analyzed by HAWA

DNA finger printing of American hardwood

- Preliminary discussions with Double Helix, company specialising in DNA timber tracking
- Funding sought for a US forest genographic map showing distribution of genetic types for tree populations
- New low cost timber DNA testing equipment becoming available to importers, retailers & regulators
- Incontrovertible proof of specific US origin and that wood is negligible risk







Questions?



www.americanhardwood.org