



Rebuilding the world's forests

One of the biggest challenges in making the argument for protecting forests is economic concerns. Timber cultivation could be the key that helps balance these concerns, says The Nature Conservancy's Justin Adams.



By Justin Adams

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Murray Grove, a building in London made using cross-laminated timber. It is the first urban housing project to be constructed entirely from solid timber. Image: Ben Schuchman, CC BY-NC 2.0

Humankind has always had a tricky relationship with forests. We depend on them to regulate the climate and rainfall, clean our air and water, sustain myriad species of plants and animals, and support the livelihoods of over a billion people. Yet we continue to destroy them, to the point that only half the world's original forest cover remains.

The price of deforestation can hardly be overstated. Trees consume large amounts of carbon dioxide as they grow, making them vital tools for absorbing the greenhouse-gas emissions – from cars, factories, power stations, and livestock – that result in climate change.



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If we continue to lose forest cover, the Paris climate agreement's goal of limiting global warming to less than two degrees Celsius (above pre-industrial levels) by 2050 will be impossible to achieve. In fact, to meet that target, we will need to *restore* a significant amount of forest cover that is already gone.

There are two ways to approach reforestation. The first is to allow agricultural lands to fall into disuse, and then wait for them to revert naturally to forest. This wouldn't cost much, but it would take decades. The second option is more proactive: plant billions of new trees.

As part of the [New York Declaration on Forests](#), signed in 2014, governments pledged to restore hundreds of millions of hectares of forests. But, with most governments short on cash these days, financing the pledge has proved challenging. Against this background, we must try to engage the private sector to deliver the needed investment.

When forests have an economic value, they are more likely to be cultivated than destroyed. And, indeed, trees have been cultivated for profit for millennia. Today, productive forests cover an area of more than a billion hectares, or about one-quarter of the world's forested land.

Such forests produce fuelwood, which accounts for about half of tree removals. They also produce materials for clothes, oils for soaps and lubricants, fruits, and other foods, such as cocoa. Demand for these products is growing, though not as fast as demand for newspaper print falls as a result of computerization.

How can demand for forest products be increased? A promising opportunity lies in construction.

Timber has always been an important building material, and remains so for residential construction in places like the United States, Scandinavia, and parts of Southeast Asia. But most buildings today are constructed using bricks and mortar, concrete, and, for larger structures, steel – all materials that produce substantial carbon emissions during the manufacturing process.

While it is unlikely that timber can fully replace any of these materials, new types of engineered wood are making it more competitive. One of these is cross-laminated timber (CLT), which is made by gluing together layers of wood to create panels that are as strong as steel or concrete, and thus can replace those materials in buildings.



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More research is required to determine the precise benefits of using timber to cut CO₂ emissions. One estimate comes from architect Anthony Thistleton-Smith, one of the United Kingdom's leading experts on wooden buildings.

He recently noted that, whereas a typical British home has a carbon footprint of around 20-21 tons, a CLT home has a *negative* footprint of 19-20 tons. In other words, every home built with CLT saves 40 tons of CO₂ emissions. If the 300,000 new homes targeted for completion in the UK this year were built using CLT, it would be like taking 2.5 million cars off the road. The climate benefits could be massive.

As with so many climate measures, cost can be a major barrier to implementation. And, according to a United Nations [report](#), CLT is more expensive than concrete in Europe. But CLT is still in its infancy, with only a handful of factories in operation. As the CLT supply chain develops, costs will inevitably fall, as has happened with renewable energy.

Moreover, builders report that the total costs of building with CLT already end up similar to those of building with concrete, because it takes less time. After all, unlike concrete, CLT doesn't need time to set.

Of course, delivering such a transformation will not be easy. Vested interests – pressure from industries producing traditional building materials – must be overcome, including by ensuring a level playing field in terms of subsidies.

Furthermore, public concerns – for example, regarding fire safety or infestation prevention – must be addressed, and builders will have to learn new skills. Most important, monitoring will have to be improved considerably, so that increased demand does not result in more deforestation.

For many countries, the economic opportunities should be sufficient to make addressing these challenges worthwhile. New plantations could regenerate rural areas, as new factories created opportunities for investors and entrepreneurs.

Governments and larger companies would be able to tap the fast-growing green-bond market to fund the early transition, including the creation of systems using drones and satellite imaging to monitor for unsustainable forestry practices.

Opportunities to align economic development with the reduction of greenhouse-gas emissions are rare. Yet that is what reforestation offers. We must take advantage of this opportunity, by pursuing a construction transformation based on restoring trees, the world's most effective carbon-capture tool. In this “new age of timber,” we would grow wood, build with wood, and allow our forests to thrive.

Justin Adams is Global Managing Director for Lands at the Nature Conservancy.

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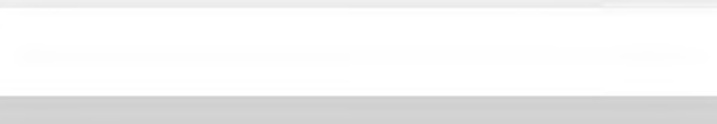
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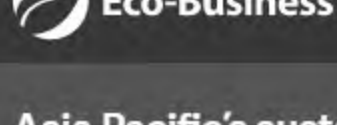
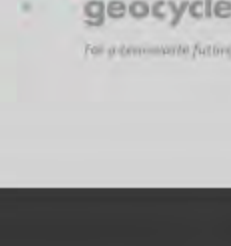
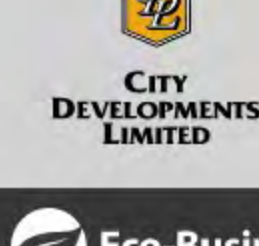
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