

Sustaining the jungles of Southeast Asia

John Halkett

The issue

The issues and challenges connected with sustaining the jungles of Southeast Asia might seem to be enormous and insurmountable and so they are. Put simply, we all need to better recognise the incredible value and worth of the region's tropical jungles and figure out what we might do to help ensure they are acknowledged and safeguarded. The plants and animals that call these jungles home also need to be carefully sustained for their own and our sake. There is no doubt that the jungles of Southeast Asia are under serious threat from large-scale land conversion, unsustainable and insensitive logging, fragmentation and loss of biodiversity, along with social and cultural degradation.

The story about tropical jungles being the 'lungs of the earth' has been told repeatedly. They are very precious biological treasure houses, containing as they do about 80 per cent of all plant and animal species on the planet, yet they occupy only about five per cent of the land surface area. Tales of looming disaster if the rate of forest destruction and clearance is not slowed have been well documented and publicised, as have the stories of

jungle destruction and imminent peril for these the richest ecosystems on the planet. A fair question is has recognition of these values and the peril they face had any appreciable impact on slowing the rate of clearance and degradation?

The environmental movement has been at the forefront of fashioning and delivering the 'save the tropical forests' message. Academic institutions and research campuses have heeded this call to arms. However despite the passion and argument the tragedy of the jungles of the tropics is continuing apace. Why is this when the case appears to be so compelling? Simple really – the argument to save tropical jungles has been largely driven by emotion and a dictatorial dogma that countries, especially those hosting tropical forests, have an implicit duty to safeguard jungle tracts.

Let's face it, the reality is that the destruction of tropical jungles has and continues to be driven by grinding poverty in the developing world and the legitimate wish of such countries to improve their economic and welfare standards, or by the avaricious consumption of western nations. Put bluntly, it is all about survival or money or both. Through necessity those tens of millions living within or close to jungles think and live short term. For



Dying mature male orangutan in recently established palm oil plantation in Sumatra, Indonesia

them life is usually about tomorrow's meal, getting the family through the week and acquiring basic needs.

They often see forests as a 'local bank' with assets that can be converted into cash to support family and community survival. The motivating factor behind all this has – and continues to be – hard economic reality where jungles have little inherent economic value and therefore need to either be converted to something more commercially attractive or they will just be gradually whittled away by the increasing millions of rural poor.

Although not necessarily palatable to everyone, economic options that might at least save the jungles are now becoming more apparent. Fundamentally, there must be a strong economic incentive to retain tropical jungles rather than destroy them. Emerging economic options may offer a solution to jungle retention from the advance of agricultural production, conversion to other forms of land use, or piece-meal destruction by local inhabitants because they have little 'real' economic worth.

It may seem to be a strange contradiction but the alarming implications arising from the adverse impacts of climate change and the need to reduce – or offset – carbon dioxide emissions that contribute to the greenhouse effect might just be part of the reason why the economics of tropical forest retention and management have the capacity to transform past economic imperatives demanding that jungles be cleared to make way for something more 'useful'.

So in a world where money talks there now appears to be a basis for arguing that the long-term protection and management of tropical jungles could be based on an economic case that has been absent from past debates. This case could achieve some critical climate change outcomes, yield wood-based products, and save the lives of those jungle animals that share the planet with us.

Economic impetus

Currently the economic drivers behind land clearing for palm oil and other crops are responsible for millions of hectares of the most luxuriant fabric of life on the planet being stripped away. With this jungle mantle and animals such as the Asian elephant, Sumatran tiger and orangutan are being pushed further down the road towards extinction. Southeast Asian jungle destruction has continued to be motivated by the reality that in hard economic terms they have little value and therefore should be converted to some other use capable of earning an immediate dollar return.

The ferment over the decades by an articulate and well-resourced environmental movement may have elevated the prominence of saving tropical jungles, but it has done little to arrest their continuing destruction. Part of the solution to sustaining jungles across tropical regions must be based on compelling economics and appeal to western economies and to developing economies that resonate at the village level among indigenous communities and rural migrants.



Jungle clearance in Indonesia for pulpwood and conversion to plantation



Regrowth *dipterocarp* forest, Peninsula Malaysia

In relation to promoting the cause of perpetuating jungle survival, developing country economic opportunities lie in part in the prospect of sustainable and independently verified wood production and carbon credit trading. Both, either by themselves or together, provide the opportunity of assigning real dollar values to jungles and the capacity to disperse income across a spectrum of parties from national and regional governments, private companies with legal entitlements over jungle tracts, and right down to local communities.

In simple terms, it is about establishing and implementing the case for developing economic incentives to retain healthy, functioning jungles across Southeast Asia. Implementing these opportunities offers the possibility of achieving what well-intended environmental, academic and research advocates have been unable to do. This is to create a set of circumstances where tropical forests are seen as an economic asset, not a liability, and where governments, corporations and local villages have a vested interest in keeping trees standing. Protecting the array of animal inhabitants will be a collateral benefit, but nonetheless a momentous achievement.

For jungles in this context, their management for wood production has advanced technically, although still has ground to cover. Now more sophisticated practices and independent verification systems are aided by some domestic value-added timber product manufacturing. Along with the prospect of carbon storage and trading this may lead to a related increased recognition of the long-term economic worth of tropical jungles.

Yes – timber harvesting too

To some degree the answer to perpetuating Southeast Asia’s jungles lies in sensitive timber harvesting with the legality of assurance of harvesting an essential step. It also lies in continuing to advance initiatives related to sustainable forest management, and frugal and value-added utilisation of tropical timber, including progress with the further development of glulam and other engineered wood products and applications. Finally the answer includes further encouragement of wood processing investment and product innovation, noting the commercial opportunities associated with carbon storage and green star building ratings.

Changes to the nature of imports and product use are interesting aspects of the timber industry in Australia and other consumer countries. In Australia’s case, at a time of overall increases in imported timber volumes, traditional tropical hardwood imports are declining but engineered wood products are increasing, as shown in Figure 1. Why is this occurring?

To some degree these changes coincide with the legality of harvesting assurance legislative requirements

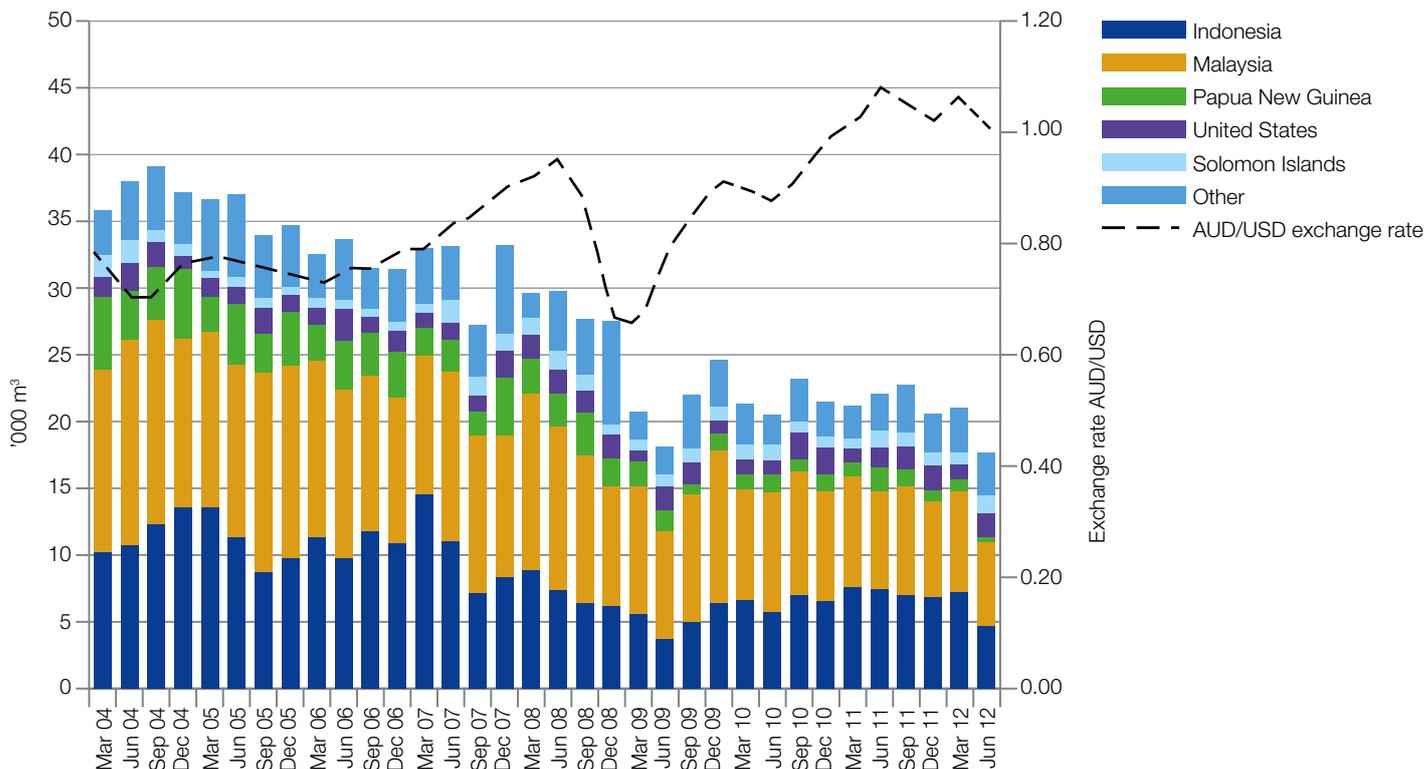
that, not surprisingly in the case of Australia and New Zealand, have put the spotlight on Southeast Asia. These include the Lacey Act in the United States, the Forest Law Enforcement Governance and Trade (FLEGT) requirements in the European Union, and the Australian Illegal Logging Prohibition Act 2012. Overall it would seem that a combination of tougher market legality requirements, innovation in building systems and products, plus a climate change abatement message are being reflected in both declining imports of tropical hardwood timber and increasing imports of engineered wood products.

Going up the value chain

However declining tropical hardwood imports are also explained by some exporters going up the value chain. For example, 60 per cent of timber products imported into Australia from Malaysia are now in the shape of furniture. Compare this with Myanmar, which annually exports about 800,000 tonnes of teak and hardwood timber and earns US\$400 million. By contrast, Malaysia exports 300,000 tonnes of timber and earns US\$6 billion in export receipts.

This means that Myanmar generates only US\$500 per tonne while Malaysia benefits by US\$20,000 for every tonne exported. This is a staggering difference explained in large part by the fact that most of Myanmar’s wood-based businesses are low-tech industries like sawmills and log exports, while Malaysia has been smart and climbed up the value chain, now exporting more wooden furniture than basic timber products (Khin Htun Food & Agriculture Organization, 2009).

Figure 1: Overall timber imports increasing but tropical hardwoods declining – quarterly Australian tropical hardwood imports by source



Source: Global Trade Atlas, Reserve Bank of Australia

Clearly a vital aspect of improving the economics of tropical forest retention is for producer countries to move up the value chain, which is to produce more sophisticated products than just logs and sawn timber. The maths are simple enough – the more value that is added to the finished product, the less sensitive is the price paid for logs.

Another interesting trend in Australia, as in Europe and North America, is that momentum is growing to take timber products into the formerly forbidden territory of tall building construction. Products like cross laminated timber are gaining traction, with Australia posting a couple of notable firsts. The Docklands Library and Community Centre, now nearing completion in Melbourne, will be the first public building in the world to be constructed from pre-fabricated cross laminated timber panels. This complex is part of a not-so-quiet global revolution in tall wooden building construction. The first massive timber building in Australia was the Forté tower, which at 32.2 metres is currently the tallest modern wooden apartment tower in the world.

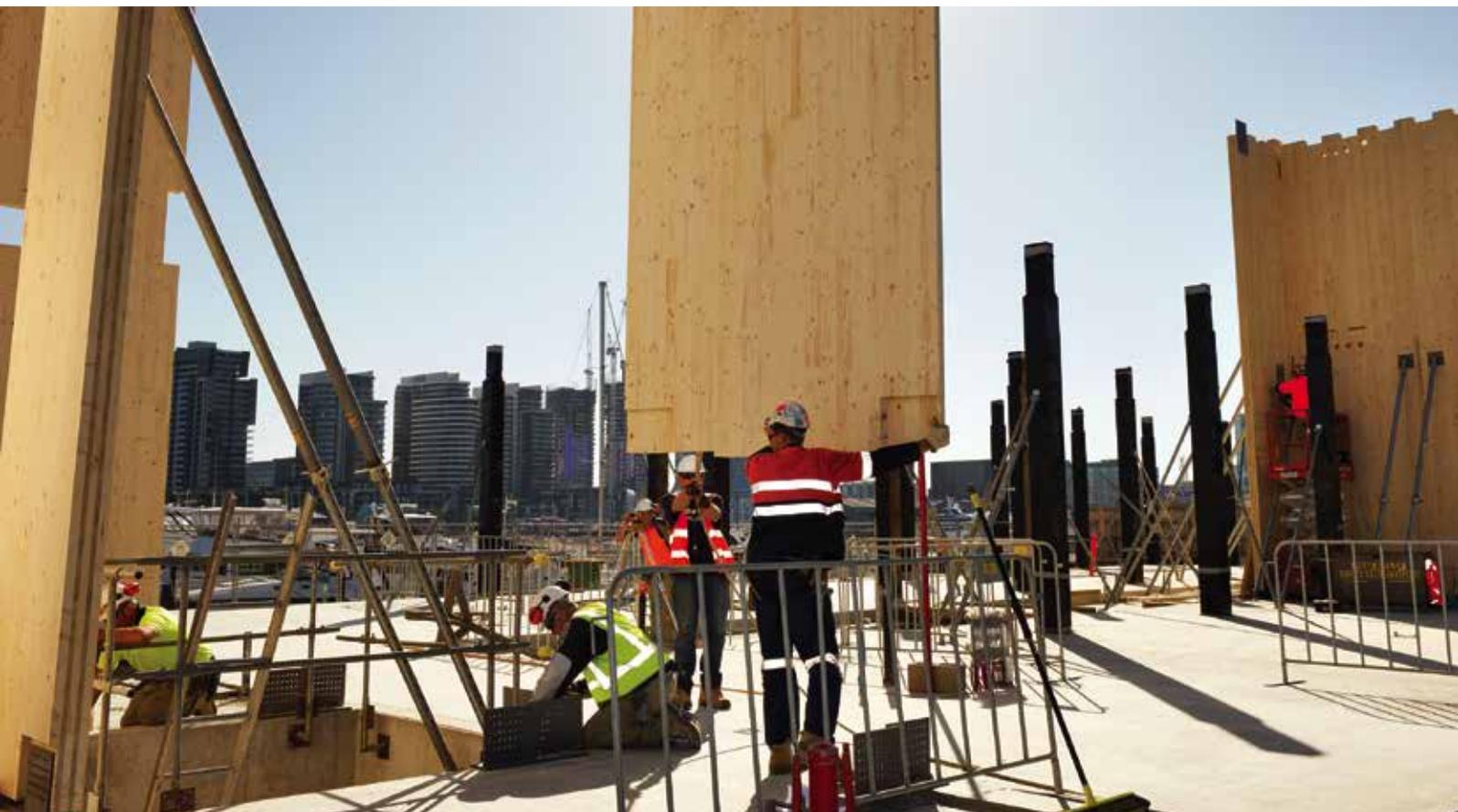
Cross laminated timber use is growing rapidly with sustainability and reduced environmental footprint key drivers behind this trend. Also it has similar levels of structural performance to pre-cast concrete and acceptable thermal and acoustic performance attributes. Cross laminated timber is also two-thirds of the weight of comparable concrete buildings. The construction

process is cleaner, simpler and faster, and there are construction cost-efficiencies and positive carbon storage and life-cycle carbon emission attributes.

Australian development company, Lend Lease, is leading the global cross laminated timber construction charge. It is the most significant form of innovation in construction technology that this country had seen in many years and may transform the construction industry by introducing a more efficient and environmentally-friendly construction process than ever been undertaken before. Lend Lease is aiming to develop 30 to 50 per cent of its apartment pipeline using cross laminated timber (Nieland, pers comm, December 2013).

Implementing economic incentives

The proposition that the destruction of tropical jungles has been in large part driven by poverty and the wish of Southeast Asian countries to improve their economic and welfare standards has been well established. We have also been able to confirm that the motivating factor behind this has and continues to be the economic reality that jungles have little inherent economic value. Despite descriptions of the jungles across the tropics being precious, priceless and irreplaceable the economic logic has therefore been to either convert them into something more economically 'useful' or just accept that they will be whittled away and the land put to some other use.



Cross laminated timber panels, Docklands Library and Community Centre development, Melbourne

Yes, the destruction continues to be motivated by the reality that in conventional economic terms tropical jungles have little tangible value and should therefore be converted to some other use that is capable of earning a dollar. It is now apparent that there must be strong economic incentives to retain and perpetuate jungles rather than destroy them. We have noted both traditional and emerging economic options that may offer a solution to retaining jungles from the steady advance of palm oil plantation development, conversion to other forms of agricultural land use, or just piece-meal destruction. There may now be a sound basis for arguing for long-term safeguards and for managing tropical jungles founded on an economic case absent from past debates.

We have established that in relation to promoting the cause of jungle survival, economic opportunities lie in part in the increasing prospects of sustainable legally verified wood production and carbon credit trading. These activities provide an opportunity for assigning measurable real dollar values to jungles and providing the capacity to disperse income generated across governments, companies and communities.

In addition to more conventional outcomes this economic case could yield innovative value-added wood-based products, achieve some critical climate change outcomes, and save the lives of those who share the planet with us. In simple terms, it is about establishing and implementing economic incentives to retain healthy, functioning commercially-viable jungles right across Southeast Asia. This necessary economic scenario will help to create a set of circumstances where tropical jungles are seen as an economic asset, not a liability, and where governments, corporations and local communities have a vested interest in keeping trees standing.

Conclusion

We know that it is easy to be gloomy, pessimistic, despondent and even desperate about the future prospects for the jungles of Southeast Asia. However a combination of the actions we have traversed offer the prospect of a better tomorrow for sustaining jungle ecosystems.

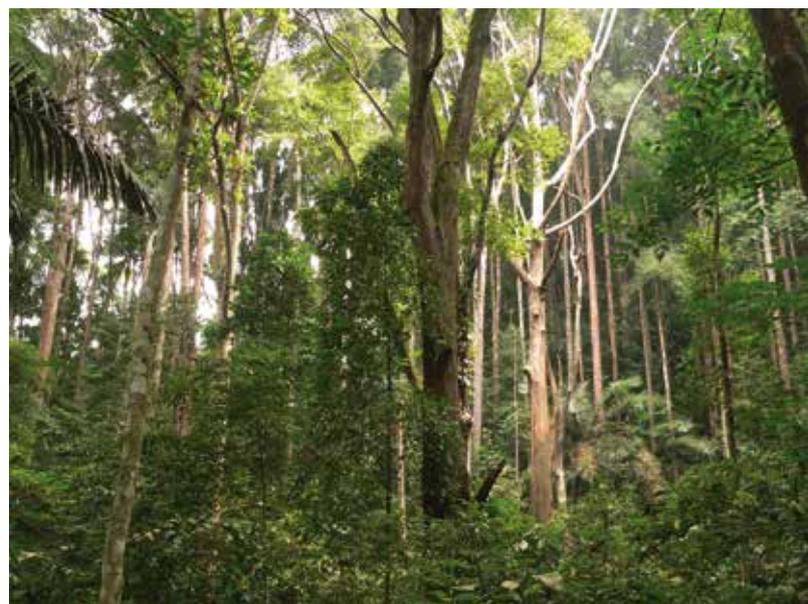
In case there is any doubt let us be crystal clear – making trees too valuable to destroy is a critical piece of the solution to jungle survival. Making sustainable forest management and value-adding timber manufacturing score well on the economic scale will, perhaps more than anything else, help ensure that jungles remain intact. We should also continue to prosecute the case for environmental services, such as carbon trading, to gain an additional commercial hard edge to tropical forest management and almost incidentally deliver some really compelling environmental outcomes.

References

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- Nieland, Andrew. 2013. *Personal comment*. Head of Timber Solutions, Lend Lease, Miller's Point, NSW, Australia.
- John Halkett is the Managing Director of Sydney-based Forestlands Consulting. The company has particular expertise in temperate and tropical forest management and forest-based industries. He is also the General Manager of the Australian Timber Importers Federation and a Director of forest carbon company, Leaf Carbon. He is a member of the peak Australian forest industry advisory group to the Federal Minister for Agriculture, Fisheries and Forestry, the Forest and Wood Products Council and the NSW Forest Industries Taskforce.*



Jungle canopy in Malaysia



Managed tropical jungle in Malaysia