

Data, blockchains, forestry

Forestry investor **Brendan Duggan**, head of the Timberblocks project, explains how database management and blockchains can open up timber management and forestry investment.

Imagine owning a small stake in the management of a sustainable forestry project in Africa; being able to monitor your share in a climate-smart investment online and even transfer ownership of your share. Imagine buying a piece of wood in the UK and being able to verify yourself what specific forest it came from with the full certified chain of custody on an accessible database. Or a 16-year-old in Kenya being able to buy a token on a smartphone, representing one tonne of sustainably produced UK timber, audited and redeemable at market value. These are examples of the potential of blockchain database technology to drive future innovation in the global forestry and timber industry.

Jargon alert! What is blockchain?

A blockchain is a shared database that is very difficult to change retrospectively and has no central authority controlling it. The most famous blockchain is the Bitcoin network which is run by thousands of its users around the world, all of them approving, recording and timestamping every transaction - which in bitcoin's case is a currency, payment system and store of value. Instead of a bank approving transactions all the users approve everything in accordance with the basic software set up. Trust lies not in overseeing authorities but in the mathematical algorithms, all verified and available to view online.

BLOCKCHAIN TECHNOLOGY HAS THE POTENTIAL TO CHANGE THE DYNAMICS OF INVESTING IN FORESTS AND TIMBER AND COULD INFLUENCE FOREST MANAGEMENT FROM THE GRASS ROOTS INVESTOR LEVEL.

Just about any kind of database can be put on to a blockchain - possible examples being land registries, elections or vehicle registration schemes where records need to be held in a secure but accessible environment.

Global trade, shipping, manufacturing supply chains, insurance, food import export, energy, insurance, and many other industries are adopting these databases for their own purposes. This vastly improves efficiency, chain of custody monitoring, proof of origin, inventory management, and reduces waste and fraud.

Transparency in global timber supply chains

An important feature of blockchains in supply chain management is that the database works on scientific proof rather than honesty of participants, permanently available to see for whoever has permission to view the database.

The advantages of this kind of system being applied to the movement of timber products around the world is clear. A system capable of verifiably tracking timber consignments from source at felling to end product at the point of sale to the consumer.

Illegal and unsustainable logging and deforestation will remain a global challenge for the foreseeable future and the ability to track a specific item of timber from its source to the consumer is likely to gradually move away from voluntary certification. The future will be scientific proof of origin with the use of DNA technology, isotropic testing and other chemical markers all playing a part. Notice the use of 'consumer' at the end of the chain here rather than retailer - increasingly, it will be the consumer of a piece of wood who will want to verify the provenance of their purchase themselves by viewing the chain of custody and its associated certifications, and savvy retailers will enable this. House buyers will want to verify themselves where the floorboards came from and that they are not outsourcing the CO₂ history of a product to other countries. Mortgage lenders could require surveyors to verify the provenance of wood products

in buildings. Forest certification bodies are well placed to embrace this new approach and we are in discussion with non-profit organisations to help them further enhance their own effectiveness.

The technology offers governments and regulators previously unavailable management tools for overseeing timber transport, import export data, carbon impacts at home and abroad attached to imports. All in real time as well as analysed retrospectively.

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A paradigm shift for forestry investment?

The natural evolution of a blockchain representing the custody of products is the emergence of tokens which, when assigned to a company or person, represent control or ownership of a defined part of that product. For example, there are blockchain based tokens representing one US dollar or an ounce of gold or a barrel of oil and these tokens are themselves bought and sold enabling liquidity of trading and low cost transactions. There is increasing demand for such tokens representing value for organisations wanting to improve chain of custody and supply/demand management through the ownership of tokens, as well as investors.

Tokens could be assigned assets such as standard amounts of standing and harvested timber - tracked, audited and redeemable at value and therefore capable of being bought and traded by the pro-

and timber

BE PART OF THE BLOCKCHAIN REVOLUTION

The blockchain revolution can change the dynamics of how individuals and organisations interact with and influence forestry, the timber business and climate change initiatives. It is an emerging technology in the early stages of adoption but already the implications of its use are becoming clear.

There is much work to be done, however, and investment is required, not just in the form of finance but also in the form of 'buy in' from the industry and support from the appropriate authorities. To this end, the Timberblock project is looking for collaboration from interested individuals and organisations who can make contact via www.timberblock.org.uk

verbal 16-year-old in Kenya on a smartphone and the millions of other like-minded people around the world.

Right now, commercial forests are owned by rich individuals and financial institutions. This technology has the potential to change the dynamics of investing in forests and timber and could influence forest management from the grass roots

investor level. It could remove 'gatekeepers' to investment and change forever how individuals react with commodities and how they modify their spending according to their financial needs and environmental principles.

Like many new technologies, there are risks and both consumers and investors would need adequate protections in place

from unscrupulous schemes that the forestry industry has seen in the past - notably in tropical hardwoods, and in the UK and the US they would qualify as regulated financial instruments. But done properly with the right reputational management it opens up participation in forestry and timber to millions of individuals around the world who want to play a part in it.